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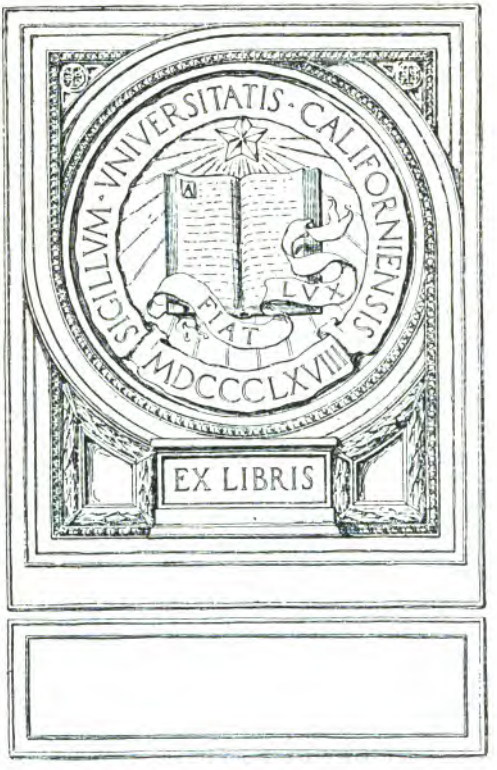

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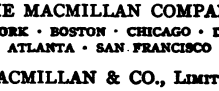

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THE WORK OF THE TEACHER

BY

SHELDON EMMOR DAVIS, PH.D.

DIRECTOR OF DEPARTMENT OF EDUCATION

STATE NORMAL SCHOOL, MARYVILLE

MISSOURI

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FOREWORD

THE aim of this book is indicated in its title — *The Work of the Teacher*. Its purpose is to aid directly in preparation for vocational duties and to interpret attitudes and relationships from the professional viewpoint. Duties specifically associated with the teacher's office are emphasized rather than those which are shared with other members of the community. Every teacher must conduct class exercises, manage and govern pupils, and make out school reports because of his status as teacher; in common with the lawyer, merchant, or farmer he is also expected to be a patriotic, intelligent citizen, alert to give his best service wherever it is needed. With the teacher *as a teacher* this volume is concerned. Unless he stands four-square with the world as an honestly equipped workman in his chosen field, he lacks much of the full stature of citizenship, and can exercise no leadership in the so-called "wider fields" of community life. The teacher's strength as a citizen begins with a firm and efficient grasp of the school situation. It is to emphasize the necessity of meeting fully the technical responsibilities of the teacher's occupation that this book is written.

Educational principles are not less valid if approached through the medium of concrete exercises connected with everyday school life, such as those appended to each chapter. Young teachers usually search for devices of immediate utility before they grasp educational generalizations which come only with study and experience. It is believed that the specific

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suggestions here offered are based upon sound principles of which beginners should become increasingly conscious as they read. The exercises are not based exclusively upon preceding chapters, but usually contain considerable material supplementing the text. They have grown out of practical school experience, have been used for several years in the writer's classes, and are designed for class use, though a large per cent of them can be worked out by the lone teacher in connection with his daily school tasks. Used in this way they should give added meaning to the teacher's work and lead to more effective procedure.

Aside from his colleagues in the broad field of education, former instructors and students whose unmeasured influence has furnished most of the content of this book, the writer is indebted to his wife, Mary Coleman Davis, who has contributed specifically to every page; to his sister, Helen M. Davis, who read the manuscript critically and constructively; to his associates in the State Normal School, especially W. J. Osburn, C. A. Hawkins and Miss Beulah Brunner; to P. P. Callaway, Teacher Training Inspector of Missouri and to Dr. W. C. Bagley whose views may unconsciously appear without quoted recognition because of the author's long continued use of his textbooks in education. Finally, acknowledgment is made to Dr. Bagley, Dr. John Dewey, Miss Lida B. Earhart, Dr. Ernest Carroll Moore, Dr. Arthur C. Perry, Jr., Dr. E. L. Thorndike and to the Houghton Mifflin Company for kindly given permission to quote with credit brief extracts from their publications.

S. E. D.

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THE WORK OF THE TEACHER

CHAPTER I

WAYS OF REGARDING EDUCATION

Introduction and analysis. Most educational discourses may be analyzed into discussions of the *why*, the *what*, or the *how* of the school and its work. The content of this book relates chiefly to the *how*, with which teachers are most constantly confronted in their daily activities. Though it often falls to the philosopher to state aims, and to administrative officers to prescribe the what, as laid down in the course of study, it is a poor teacher whose mind forever dwells upon questions of method and management, neither of which achieve full meaning except in relation to the purpose (the why), the subject (the pupil), and the material (the curriculum) of education. For this reason the first three chapters are devoted to an introductory presentation of these topics. Since acquaintance with them is a condition of success in the first-hand contacts of the schoolroom, their understanding is part of the teacher's work not less than is instruction itself.

Aims of education may be classed as ultimate or general, and as proximate or specific. Most educational purposes discussed as aims by writers upon education are general. Proximate aims include those of which classroom teachers are

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likely to be conscious: to teach a given lesson, develop a specific ability, or to memorize a bit of literature or a formula.

Necessity of studying ultimate aims. General statements of the aim of education have been made since man began to think of the subject in a well-ordered way. Without aim, the process goes on blindly; some one must guide. In autocratically governed societies political leaders alone may be concerned with ultimate aims; in a democratic society all must be interested in the goal toward which preparation for full citizenship tends. Philosophers and leaders may formulate educational aims, but no intelligent teacher can afford to regard discussions of these as too remote or abstract to receive careful study. Rather it should be said that the teacher for whom the great conceptions of educational purpose have no meaning cannot be intelligent.

The final result of the work of the school has more significance than any method, or device, or unit of subject matter, however important it may seem in the work of the day or term. Beginning teachers, in a most commendable zeal to find "something that will really tell how to teach," are sometimes impatient of lectures or chapters which deal with the larger phases of education, considering such material "too theoretical." It is worth while for such teachers occasionally to force themselves to a study of some of the great formulations of educational aims; they may be surprised to find how much meaning is thus added to the activities of daily school life.

General aims useful for comparison. Educational aims stated many years ago, since they afford means for serious clarifying of opinion, are especially worthy of study by way

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of comparison with those accepted by contemporary writers. Only those which are in most general terms have been preserved, and much of what seems to be a difference of ideal soon proves to be merely a difference in mode of expression. Thus the statement of Plato that " a good education is that which gives to the body and to the soul all the beauty and perfection of which they are capable " is as true as when uttered. It seems to lack definiteness, though extended amplification could make it as specific as any modern aim. Complete living, harmonious development, or moral character would serve as well as adjustment or social efficiency as far as a logical or ultimate goal is concerned.

All these are general concepts which may be interpreted so as to give an infinite number of concrete meanings applicable to specific situations. Because of the peculiar interpretation given to " moral " character, the Herbartian aim seems one-sided though its advocates claim that it includes all the values of other aims now accepted; because of popular and short-sighted notions of " efficiency " all use of the word has ceased to have meaning, and " social efficiency," having served its generation, promises soon to be cast aside, excused from active service, and placed among the reserves. Though an educational aim achieves its greatest value when related to specific content, no aim stated in concrete terms can receive wide or long-continued recognition, and however general it may be, popular use soon attaches a one-sided meaning which limits its acceptance. The process of clothing with specific meanings a general statement of the purpose of education is a valuable experience for any teacher.

Study of aims enlightens practice. It is often said that those who teach have little idea of the design of their work;

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that they are so concerned with its mechanism that they seldom look to the direction in which they are tending. In schoolroom language, they are accused of teaching required amounts of reading and arithmetic while regarding themselves as too busy to be concerned with the reason for such teaching or the effects upon the pupil of that which is taught. It may well be questioned whether teachers are less intelligent about the larger phases of their work than are the members of other occupations not better trained, but they are not equipped with a broad enough professional outlook, a fact admitted by the rank and file of teachers in their conscientious striving for better things.

Thoughtful teachers, which includes all except a few who are part of the routine of their work and so without power to take themselves or their teaching seriously, are constantly raising questions as to the *why*, or the meaning of what they are doing. The true teacher's thoughts are not always confined to a search for the answer to such eminently necessary questions as "How can I bring this class to a knowledge of addition of fractions?"; "How many words should a third grade class read in a minute?"; or "What is the most economical way of memorizing a five stanza poem?" After all such queries are settled, larger and less easily answered questions remain. "Why are schools maintained?" "In addition to being a certain quantity of arithmetic, spelling, or geography, what is the meaning of the course of study?" "Since some children do not seem to care for much of what the school offers, why must I exert myself to make them care, especially for material about which I have never been much concerned and for which I have not thought out a very convincing justification, though I

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have been disposed to regard it as a part of the natural and inevitable? "

Before consideration of the specific elements of the teacher's work, which constitutes the chief content of this book, a few educational aims are noted: they are presented as ways of regarding or " looking at " education in the belief that many teachers will find it less difficult to utilize viewpoints than aims. The teacher who is conscious of some of these larger views has a background and an aim; he also has standards for weighing each method, device, disciplinary measure, or unit of subject matter and for testing educational fads so as to see in true perspective the insignificant details which noisy advocates would magnify out of all proportion to their importance. He has the freedom which comes with acting from principle rather than from rule.

1. *Education regarded as a means of transmitting social inheritance.* " Education as a social institution may be defined as the method by which a particular generation endeavors to incorporate the vital elements of its civilization or culture into the life of the generation that succeeds it." [1] It is useful to think of the school as the specialized agency for transmitting the inheritance of civilization. The idea of inheriting property or physical traits is already familiar. No less truly are skills, interests, ideals, and habits handed down from generation to generation, especially through home and school.

The individual who has not learned to read, to care for good literature or music, or to be honest and industrious is a pauper in these fields because he has not received his social heritage. To add, write, spell, sing, or draw pictures; to work hard and perseveringly, to be polite, fair-minded, honest, or neat;

[1] Macvannell, 30.

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to like a good story or book or a fine landscape; to have a sense of humor or the ability to show sympathy — these, with thousands of more specific accomplishments necessary for participation in social life, are not inborn and must be regarded as parts of the cultural possessions of society which it is expected each generation will receive largely through the school. Viewed from this standpoint, how important the teacher's work becomes! And how vital it is that the conductor of a school shall be one who has acquired a good measure of this inheritance!

2. *Education regarded as a means of naturalization.* A second useful way of regarding our work is to think of it as a means of naturalization. This somewhat poetic view is of course founded upon a comparison between the child and the immigrant who arrives in our country with so much to learn. A baby is in more than a fanciful sense a stranger; he must acquire language, habits, morals, ideals, skills, attitudes, social standards, responsibility. To one who will make the effort, a daily estimate of the increasing list of situations in which a normally developing child progressively finds himself at home is well worth while. The extent of one's naturalization, as the term is used here, is a good measure of the breadth of his culture or the degree of his education. As the teacher of a primary class looks upon her charges, how small and helpless they seem! What a group of little strangers they are and how much they have to learn before they can make their own way and feel at home in the world! The teacher's great question is "How have I helped these little foreigners toward fuller naturalization?"

3. *Education a means of developing wide interests.* A third useful way of regarding our work is to think of it as a means

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of increasing the interests of pupils. When one says, "I am interested" it is understood that he esteems the object of his interest worth while. A person who shows weak interests is considered passive, apathetic, or stolid; if he has few interests but these so strong that they have dwarfed all others he is often properly rated as narrow-minded, an extremist, a bigot, or a fanatic. It is the business of the school to develop a wide range of permanent desirable interests, to increase the number of satisfying things which the child is building into his world. The extent of one's interests may be tested by what he reads, plays, works at, or enjoys. The narrow outlook of children from many homes presents an appalling problem; aside from animal gratifications it seems that they do not greatly care for anything worth while. Much of what society offers as best remains the property of a few because of failure to develop wider interests among those of school age; it has even been said that new interests are seldom if ever aroused or made an integral part of character in persons more than twenty-five years of age.

Most of our unused wealth is of the kind whose use would cost little or nothing, while contributing greatly to that richness of experience which best measures the value of life. Culture itself has been defined as "training for the impersonal pleasures, for the unselfish satisfactions which involve no necessary deprivation for any other man." [1] The interest in cloud shapes, sunsets, wild flowers, stars, amateur gardening, making collections, stories, current events, playing games are typical of those which nearly all children should be led to develop.

4. *Education a means of developing social efficiency.* A fourth and now very widely accepted statement of the pur-

[1] Thorndike: *Education*, 47.

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pose of education is that it aims at the development of the socially efficient individual. The usual interpretation of this aim stresses doing, — attainment for social as opposed to individual ends. Such anti-social groups as the criminal or immoral; tramps, idlers rich and poor, and other social parasites; persons who lose time through preventable illness; and, in less degree, those who do unskillfully, with inevitable accompanying waste, what superior training might have accomplished with greater economy — all these are examples of failure to realize social efficiency.

The virile grip of this conception of education makes it peculiarly applicable to social situations involving tangible elements or those readily translated into deeds, and it is easy to think of an education which shall result in efficient handwriting, spelling, manual or athletic activities, or even in efficient honesty, justice, or equanimity. The force of the word "efficient" which so generally gives it a meaning of "doing the work" or "getting results" renders it difficult sometimes to apply this aim to more subjective values whose final social worth may be the greatest.

Thus education for efficient enjoyment of literature, sunsets, leisure, vacations, or for the production of efficient art, anthems, or good manners seems to involve unusual use of the word. A school might pride itself upon an *efficient* heating plant but hardly upon an *efficient* landscape for the enjoyment of its pupils. Superficial understanding of this aim is likely to give undue weight to vocational as opposed to cultural studies. Bread-winning values are easily appraised; the effect of literature, history, and linguistic subjects upon which common traditions and ideals insuring national solidarity depend, often defies analysis, but the stress of a world war should

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convince the most zealous advocate of narrow practical education that modern democracy is not in need of bread alone. If efficiency is given its full meaning of that which is effective, fulfills its functions, or achieves results, social efficiency remains an excellent formulation of educational purpose. No one objects to a demand that education shall be effective, provided remote as well as immediate values are given recognition.

Proximate not superseded by general aims. In stating briefly the foregoing somewhat general aims it is not implied that teachers should be constantly dwelling upon these. Proximate aims will always occupy most of the time of teachers of children, whatever may be true of philosophers or those who administer education. An instructor who unceasingly inquired concerning the value of each minute portion of subject matter, or asked himself during every class exercise whether what he was doing would result in social efficiency or widened interests would probably be a poor teacher. Yet it is profitable for all teachers to take serious account of what they are doing, and to measure results by general and ultimate standards, as well as by the little measuring sticks of quiz, examination, or objective scales and tests. What the pupil is becoming is the great question which includes all, and his entire life is the answer.

Exercises

1. Of the following definitions or aims of education choose one and show definitely why you prefer it:

(*a*) "Education is that which fits a man to perform justly, skillfully, and magnanimously all the offices both private and public of peace and war." (Milton.)

(*b*) "Education includes whatever we do for ourselves and what-

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ever is done for us by others for the express purpose of bringing us near to the perfection of our nature." (J. S. Mill.)

(*c*) "Education is the process by means of which the individual acquires experiences that will function in rendering more efficient his future action." (Bagley: *The Educative Process*, 22.)

(*d*) "Education as a whole should make human beings wish each other well, should increase the sum of human happiness and energy, and decrease the sum of discomfort of the human beings that are or will be, and should foster the higher impersonal pleasures. These aims of education in general — good will to men, useful and happy lives, and noble enjoyment — are the ultimate aims of school education in particular." (Thorndike: *Principles of Teaching*, 3.)

(*e*) "The aim of education is not to fit people to get a living, but to fit them to live. Fitting them to get a living is, however, one part of fitting them to live. For many pupils it is a large part." (Thorndike: *Education*, 26.)

2. Distinguish by illustration and by clear statement between ultimate and proximate aims of the school and of the teacher.

3. Point out, as specifically as possible, the differences between an educated and an uneducated person.

4. Accepting the definition you selected in the first of this list of questions, describe in detail the education which such an aim would indicate in the case of some school pupil you know.

5. Imagine this pupil ten years after he has left school answering the following questions:

(*a*) Are you able to make your own living, pull your own weight without being a drag upon others, or interfering with them?

(*b*) Do you think washing dishes or hoeing in the garden are as respectable as piano playing or conducting a bank?

(*c*) Do you know how to make friends and keep them?

(*d*) Are you good for anything to yourself? Can you be happy alone?

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(*e*) Is your mind occupied with anything worth while during the time when your hands are busy with routine work — which calls for very little attention?

In the light of your preceding answers how would he answer these questions?

6. Since it is possible to construct a method without determining the aim of education and discussions of the aim are often lengthy and indeterminate, is it better to discuss an aim without settling it or to accept an aim without discussion? Which are more important, aims or methods for (*a*) the teacher? (*b*) the reformer? (*c*) the administrator?

Readings

Butler: *The Meaning of Education*, 15–34.
Colgrove: *The Teacher and the School*, VIII.
Ruediger: *Principles of Education*, III–V.
Thorndike: *Education*, II–III.

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CHAPTER II

THE PUPIL AS AN OBJECT OF STUDY

The necessity for studying pupils. The central figure in the educational process was late in arriving as an object of scientific study. In pictorial art the child was long given place only in symbol, — an angel, cherub, or other winged figure; the eighteenth century child is portrayed in the dress of an adult, as a little man or woman, or as Cupid. The place of the child in art fairly represents his position; if thought of as a flesh and blood reality he became a means, something incomplete and not worthy of a place upon his own account. With Rousseau and the naturalistic movement the boys and girls appear in their own right. The latter part of the nineteenth century saw the beginning of the child-study movement which with all its uncertain conclusions gave us a few facts.

Though scientifically established facts due to child study are not numerous, the attitude which admits the necessity of a sympathetic understanding of pupils is increasingly prevalent among teachers. Lacking a body of well-established truth which may be acquired by study or consulting records of investigations, each teacher finds that his most important professional preparation results from a constant study of the pupils in his classes. The young teacher, directly from college, training school, or high school, is likely to find pupils

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distressingly unconcerned about their own progress, with no discoverable intellectual interests, and possessed of less ability than he expected. First impressions, or those formed in the early days of the term are very likely to be wrong even with teachers of experience. All such judgments of pupils need to be revised constantly, and while set opinions of what to expect from each pupil cannot be avoided, it is at least as unfortunate for a teacher to form a wrong estimate of a pupil as for a pupil to acquire a deep-seated dislike of a teacher. The instructor who says, "I am surprised at James; he had a good lesson to-day," reflects the inevitable impression produced by repeated failures. So long as one is willing to be surprised in this way there is no danger. Only when the teacher becomes blindly convinced that no good can come from James and cannot see his good work or attitude is it time to pray that insight may be given to discover the good in every pupil.

To expect teachers to make intelligent or profitable study of their pupils without guidance leads to disappointment. "There is a pupil; study him," or "Make the child your principal textbook," offers the busy teacher nothing of value. In the following pages somewhat specific suggestions are made for securing practical acquaintance with pupils; later certain fairly well established tendencies or characteristics which may usually be looked for are discussed.

Suggestions for study of pupils. 1. *Introspection.* Estimating his pupils by comparing them with himself is the teacher's use of introspection. "How would this command affect me?" "What appeal would this bit of subject matter have made to me at his age?" "What did I care for at his age?" Remembering that he has been chosen to teach because

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of intellectual qualities which a considerable proportion of pupils do not possess and that he probably cared more for books while a pupil than many of his present charges or their parents ever did, he must be on guard against a principal delusion of introspection. The teacher, when a child, was not like all his pupils now are, any more than all these pupils will grow up and become school teachers; some could not and others would not. In either case analogies drawn from the teacher's own juvenile experience need to be checked carefully by the facts. "When I was in the sixth grade I liked that story or this game; these children *ought* to like it." But *do* they like it? How many like it and which are they?

2. *Children's questions.* In the early grades children's questions are often seemingly idle. "Why does the wind blow?" "Why is plaster hard?" "Why is there no hole left in the water when I take my finger out?" "If I fall downstairs can God make it that I haven't?" To the careful observer such questions are indicative of growing interest in hidden causes. The child who asks many such questions and others not so difficult to answer is displaying to the alert teacher the exploring tendencies of an active little mind. Neglecting to satisfy these speculative interests is not less wasteful of human material than is the failure to provide opportunity for activity, of which the school is so often and so justly accused. At a later stage many children are fond of asking questions which puzzle their companions and are delighted if they can catch the teacher. Pupils with strongly marked interests ask questions which lay open their thoughts; in fact, a continued collection of the pupil's questions would constitute a chart of his mental life.

3. *School activities.* The pupil as an individual member of a school group is a more fruitful object of study for the prac-

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tical teacher than is the same child detached from the school situation. Leading one or a few half-scared children into a psychological laboratory has the merit of eliminating from the study a number of uncontrollable factors always present in classroom observations, but though it might be necessary to concede their superior accuracy, such observations are not based upon school children. What are the stories a child likes to hear or read, the songs he cares to sing, or the pictures he draws *at school?* Which subjects does he say he likes best or least? Why has he formed such opinions of his studies? Does he do his best work in the subjects of his choice? What errors characterize his oral expression, his written work, his drawing or arithmetic? Does he follow or lead on the playground? Is he fair, honest, frank? What kind of excuses does he make? Observations which lead to the answer of these and a host of similar questions may be very significant in modifying the teacher's attitude.

4. *Parents and home environment.* A study of parents sheds indirect though very illuminating rays upon the pupils they send to school. The unfortunate child from a bad home is that home brought to school; his more favored fellow from a good home brings already incorporated into his very nature much in ideals, attitudes, habits, and manners which the most successful school can never develop if the home has not furnished the foundation. Consider the contrasts in these not extreme cases from a typical fifth grade.

Pupil A. — Father unable to read; works ten hours a day at hard physical labor, is especially fond of low stories; mother able to read hesitatingly easy selections, is industrious but a poor manager. Neither parent attends church, lecture courses or picture shows, nor are there books and newspapers

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in the home. Both parents are stolidly honest but have very limited knowledge of the physical or mental needs of their large family of children. The mother's control of her family is weak, alternately vindictive and sentimentally relaxed; the father's attitude is one of sternness and repression characteristic of an earlier era, a man of few words and occasional great severity practiced long enough to inspire in his children a deep-seated dislike for their father which makes anything like comradeship impossible.

Pupil B. — Father a well-to-do business man of education, culture, and refinement, whose good sense has kept him from being a slave to his occupation; mother a graduate of a high class college; her dominant interest in home life has not prevented participation in the social life of the community; both parents are companions of their children, with whom they ungrudgingly share many hours each week. Children from this home have continually had access to more numerous and better books than the school library affords and have been guided in their reading and play by parents who have not forgotten their own happy childhood spent in an equally fortunate environment.

Any teacher can profitably make an estimate of the parental and home resources or liabilities of his pupils. It is especially worth while to take time to do this very fully with extreme cases. There is perhaps no better way of guarding against unreasonable expectations than to have clearly in mind the meager, negative, or debasing influence of the home from which an indifferent pupil comes. The richer the store of previous experience, the more the pupil can profit by what the school offers. "To him that hath shall be given" means in education that the child who brings most to school is bene-

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fited most by attending. Yet though the teacher may reasonably formulate fairly accurate expectations based upon home conditions, he must ever be alert to discover and develop ability and attitude wherever found.

This is not an implication that the homes of the well-to-do are always the best for the child's development. Parents are sometimes so indifferent or so lacking in intelligence concerning the welfare of their children that they permit unsuitable food, especially too much candy or coffee, allow late hours, and sensational plays or film pictures, and then appear distressed when the pupil falls behind, and accuse the teacher or the course of study of producing " school nervousness."

5. *The child in literature and psychology.* A study of juvenile literature and child psychology is valuable chiefly for giving viewpoints for the study of the pupils in one's classes. The subsequent careers of those whose lives we study are reflected in their biographies. Unusual characters to begin with, their biographers naturally search for remarkable events in their childhood. To be popularly interesting children of story books must be idealized or caricatured: perhaps the grotesque or ludicrous actions of Tom Sawyer represent a composite which might be duplicated by abstracting highly individualistic qualities from the pupils of many a schoolroom, though a match to this hero's character might be impossible to find. Wide reading of juvenile literature descriptive of the acts of children not only adds interest to the study of one's pupils but helps to differentiate types and characteristics.

Characteristics common to pupils. The study of psychology, as well as the practical experience for which suggestions have been offered, confirms the hackneyed expression

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that " children are more alike than different." Economy of classroom instruction depends upon these common qualities. That most children resemble each other generally has perhaps been too much taken for granted without accurate analysis of similarities, but the literature of individual differences has for many years been abundant and specific. A teacher is better acquainted with his pupils if he is able to note their likenesses as well as their individualistic qualities, for one is discovered by study of the other; accordingly, a few common characteristics are next discussed, followed by a brief statement of individual differences as they concern the teacher.

1. *Narrow, personal, specific nature of child's experience.* The child's experience is narrow, personal, specific, and yet indefinite — in the first year or two of school life extremely so. Entering from home, he is long familiar only with home environment; the standard of his measurements is *his* father, *his* mother, *his* pony or toy wagon. He knows little except what he can handle or bring to *action* through some motor channel. The restricted experience of children in the first years of school life may be traced in their comparisons of each new acquaintance with something in their own personal world, by their definitions, and by an unconscious selfishness which arranges the known world in relation to their own convenience. The child of primary age is three fourths activity, most of which the school cannot use, and only a small part of which he himself can direct to any accurate or well-coördinated purpose.

2. *Experience rather than words lacking.* From the first it is experience which the child lacks rather than words or other symbols. Normally experience comes through many sense channels: the pupil who seems unable to express himself is

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more likely to be suffering from absence of clearly differentiated sense impressions than from verbal bankruptcy. Experience and expression are a team which must progress together; the tendency of the school to drive the word member of the team too fast must be constantly recognized and checked. A child's vocabulary developed far beyond his experience represents emptiness; compositions would be less troublesome if pupils always had something to say before being asked to say it in writing. Recognition of the meagerness of pupils' experience and the waste and danger of verbalism in education has led to the demand that all material presented shall be given a concrete basis.

3. *Apperceptive quality of all learning.* Apperception, interpreting new experience in terms of what has already been acquired, is a necessary condition of all learning. To be assimilated, all that is presented must contain the familiar as well as the new. The richer the store of previous ideas the better the comprehension and the more rapid the acquisition. It is for this reason that the teacher must have a reliable inventory of what the child knows or has experienced; before capital can be intelligently used its amount and kind must be known. It is upon apperception that the power of suggestion depends, for clearly no one can invoke what is not in the mind. A large number of wrong notions are the direct outgrowth of the necessary tendency of the pupil to use what he knows or has made habitual in interpreting the new which is presented. Not infrequently even an uncritical observer can discover the projection of previously acquired and obviously correct ideas into new situations in which they are no longer true. Thus the child having built up the significance of -ed as the sign of the past tense, to our discomfiture carries it

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over in his language and spelling as *teached, thinked, swimmed, maked,* and *throwed;* similarly he says *gooder, goodest* or *bader, badest.* In such cases the child's mind is working logically with the generalizations we have taken pains that he shall develop, but in a social world not always logically arranged. All normal children make such mistakes, quite independent of the models they imitate; in a sense they are right and the language is wrong. To a limited extent these errors, amusing as they may seem, are an evidence that the mind acts consistently. They manifest the relentless logic of the child. "Where did he get that notion, opinion, or interpretation?" is worth following since it often results in better understanding of the background from which the notion came.

4. *All children pass through fairly marked stages of development.* The stages of development through which children pass doubtless rest upon an instinctive basis, though authorities are by no means agreed as to the extent of the influence of original nature, and the answers to any except the most general phases of the question are not vital to the teacher's understanding of the pupils themselves. Whether building playhouses is the survival of a primitive instinct or the result of imitation, the fact remains that children pass through a stage of building houses. *Delayed instincts* there doubtless are, such as those upon which parenthood depends. *Transitory* instincts — those which act strongly for a time and then seem to disappear — are perhaps those which show a period of maximum activity and then wane but which never disappear as interests. The man who while a boy collected stamps or birds' eggs never quite loses his interest in these activities though his actual collecting may be of a different kind. Prac-

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tically all children in the earlier grades are fond of repetition in their stories in a degree which would be tedious to their companions a few years older. The sense hunger of the seven-year-old shows itself in a taste for striking contrast in music, for vivid colors, and, in narration, in his tendency to exaggerate; a few years later he normally cares for finer discriminations and more delicate tones and shades.

Social motives may be more strongly counted upon in the upper grades; love stories eagerly devoured by high school pupils are scorned by the typical boy of the sixth or seventh grade. These are merely examples of stages of development through which children pass; every teacher's work is made easier and more effective if such stages are closely watched and methods made to conform. To neglect or attempt to repress needlessly harmless interests is like the action of the unskillful boatman who does not understand the current: the boat must be propelled upstream, but to oppose the current with the broad side of the boat increases the difficulty without advantage.

5. *Diffusion.* Accompanying the acquisition of any art there is usually much unnecessary effort. This tendency is called " diffusion " since a large amount of the energy put forth is diffused or scattered instead of being centered upon the desired accomplishment. Illustrations with which every primary teacher is familiar are the contortions and death-like gripping of his book which characterize the beginner in reading, or the grimaces and finger clutchings of the first writing lessons.

Though motor diffusion such as the foregoing is most easily detected, it seems probable that the diffusive tendency is to be found in all learning and that it persists in all grades. In

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dim recognition of this the teacher often says to a pupil wrestling with a difficult task, "You are making that too hard for yourself." Assisting one to find for himself the essential effort necessary to the solution of his problem is one of the finest devices of supervised study. Diffusion being inevitable during initial stages, it should cause no anxiety unless persistently continued. The abecedarian usually discontinues his convulsive movements as soon as reading habits are well established; if he does not, of course every ingenuity should be exhausted to prevent the fixing of awkward mannerisms.

6. *Pupils' interests and abilities are dirigible.* The ability which most children possess may be directed into any one of several channels with nearly equal ease. What seem to be special aptitudes generally begin as special interests. Within limits it is safe to assert that a pupil likes or is successful in a given subject because of some relatively unimportant bit of his environment rather than because of inborn qualities which enable him to succeed in one subject and cause him to fail in another. The interest of the father in arithmetic and his equally firm conviction that "grammar is no good," a specially gifted or unusually stupid instructor, good or poor textbooks — these are familiar examples of factors which influence pupils toward liking or disliking subjects of the curriculum. The next easily taken step is that of saying, "I never could get that," or "I have no head for that subject."

Much heralded "improved methods" often illustrate the unattached and mobile nature of pupils' ability. By arousing strong interest or *esprit de corps* in the teaching force, sufficient stress is placed upon a given subject to achieve truly surprising results. These are accomplished by utilizing much

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of the energy previously otherwise directed. Spectacular results in teaching three or four year old children to read further illustrate juvenile versatility; with corresponding attention the same pupils could develop equally remarkable attainment in drawing or writing.

Precocious children, one or two of whom are usually before the public as illustrations of some "modern method of instruction," still further demonstrate the fact that a pupil's ability may be directed. Aside from cases which are, upon careful examination, incapable of showing the remarkable results claimed, the advanced educational status of such children may usually be accounted for about as follows:

(*a*) They are superior children of excellent mental and physical heredity.

(*b*) Their environment is most favorable for an intellectual development of the kind which schools prize.

(*c*) From their earliest years their attention has been focused upon literary or bookish attainment. Their interests being different from those of most children, they have few playmates; if not positively unable to agree with their companions, they at least lack qualities which render them necessary or popular in any group. Thus the energy which average children devote to estimating their fellows, learning to play the game of life, becoming judges of men, developing social attitudes, and a certain amount of time usually wasted, are turned into the unusual channel of early intellectual achievement. In most such cases the accomplishments are not strikingly in excess of what any good teacher could bring to pass by concentrating the ability of a capable pupil in a few fields. A teacher who estimates the progress a bright pupil could make in five years of economical effort willingly

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directed toward completion of a course of study realizes at once that doing three years of school work in a year of time is not an impossible feat.

The examples given illustrate the possibility of guiding pupils' ability. As has been stated, it is uneconomical to run counter to interests unnecessarily; it is equally foolish to omit essential subject matter because pupils dislike it. Children's tastes are no final guide to their needs; the capable teacher can present any indispensable subject matter in a most attractive light. It is not an exaggeration to state that a competent teacher can interest almost any pupil in almost any subject.

Individual differences. Common characteristics noted in the preceding paragraphs should not blind the teacher to the very real individual differences existing among children of almost any schoolroom. All meanings in teaching are individual; there is no mass learning, and each pupil acquires what he is taught in terms of what he is. His primal instincts may be in powerful opposition to the very artificial process of education in civilized society. Or it may be, as has already been shown, that his environment has developed interests and capacities which oppose or contribute to realization of the ideals of the school. Noticing that pupils are tall or short, blonde or brunette, and that they show other marked physical divergences, practical experience and observation might be led to infer equally great mental differences; both experiment and statistical evidence prove the existence of such variations among school children. Only by utilizing all that can be ascertained concerning individual differences in general and of his pupils in particular can a teacher develop the maximum of skill. To suggest viewpoints for a practical study of pupils

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is the purpose of the following classifications of ways in which individuals differ.

1. *Differences in type of attention.* Two equally useful types of attention are those of the *student* and of the *manager*, so called for lack of better terms to designate them. The former is characteristic of the scholar who concentrates his efforts upon a single topic, oblivious of all others; it includes the absent-minded professor, so well known to the humorous columns, whom we charitably credit with having his mind *somewhere* even though it is not upon practical matters; it includes the pupil who, because of absorption in study, does not hear the signal for change of classes. The managerial type is represented by the boy who is always awake to the opportunity of being drafted for monitorial service; who is ready to pick up a pencil dropped to the floor, to run an errand, or to see all that goes on in the schoolroom, but who possesses little ability or willingness to study long without welcome interruptions. Needless to state, every pupil combines these kinds of attention; although there are no pure types, teachers of experience have no difficulty in recognizing cases to illustrate differences in power of sustained concentration.

2. *Differences in suggestibility.* Common observation shows that children react differently to suggestion. Attempts to formulate a law such as "normal suggestibility varies as indirect suggestion and inversely as direct suggestion" are interesting and worthy of study even though such a law may not hold universally. It is probable that there is less difference between the positive and the negative forms in which a suggestion is conveyed than many teachers think: the little word "not" is insufficient to overcome the vague feeling that

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the teacher, usually commanding or urging, wants something to be done. " Do not tease the primary children," " Do not cut switches from the shade trees," or " Do not use *I* as the object of a preposition " are very generally metamorphosed into a command to do something, often the deed which the negative order is intended to prohibit. " Not to do " is hard to understand; inhibition gives no visible outlet to activity and so does not arrive.

But though negation in a suggestion is likely to prove an ineffective abstraction, the tendency of some children to react negatively is well marked. The law of human stubbornness has been discovered by every experienced teacher. There are contrarient characters and perhaps all children have moments when their strongest tendency is to do exactly the opposite of what is requested or commanded. In addition to conditions less easily differentiated, the pupil who is timid, sensitive, docile, or in closest harmony with the teacher is likely to respond positively; the bold, independent, fearless character, or the one who is " set " against the teacher is the pupil who balks or flies in the face of suggestion. To teachers who are constantly making such suggestions as, " Some pupils in this class are not handing in neat papers," or " Several of you are not making passing marks in arithmetic," a tabulation of the results would be enlightening.

To employ generally suggestive terms such as the foregoing is monotonous and a useless repetition with the large number of pupils who make no response or respond negatively. It will usually be found that those who are most in need of increased effort have been slightly if at all affected; meanwhile some hard-working, over-conscientious pupils have been needlessly excited. The oft-noted tendency of classroom teachers to

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talk excessively would be appreciably lessened if the probable effects of suggestion were preconsidered.

3. *Differences in thought and imagery.* Pupils may be classed as " idea thinkers " or " thing thinkers." The idea thinker largely frees himself from the concrete; he is able to analyze readily and to classify, to generalize, formulate, and apply principles. The thing thinker is likely to learn one case at a time; all cases may seem to him of equal importance with the result that he wastes time in learning many instances when a single type study would serve as well. An illustration may make clear the difference. A pupil of the thing thought type might learn that *fate*, *hate*, *kite*, *note*, all contain long vowels but would be slow in grasping the generalization that the final *e* in such words has any significance in pronunciation.

The essential difference between the two types is the amount of individual meaning or concrete imagery which must be carried. The idea thinker is able to carry on his thought processes with a minimum of the former. He thinks of a stony field without picturing individual stones; in calculating the paper required for a wall he is not greatly conscious of the color of the wall or paper, or the appearance of the rolls. As in types of attention there are no cases of exclusively " thing " or " idea " thinkers, but striking degrees of difference in ability to work without the concrete and the individual are to be met in every schoolroom.

A difference of mental imagery used in acquiring, remembering, using, or enjoying meanings relates to the sensory basis of the impression. Most children acquire perceptions principally through the eye — are visualizers; in varying degrees all receive auditory, olfactory, dermal, tactile, and motor impressions. Such differences depend to some extent upon

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original nature but more upon experience. Thus because of his acquaintance with it a garden means to one child something to look at; to another the taste or smell of vegetables is suggested; to a third sensation of pulling weeds might be most evident. Mention of a selection in music might recall the sound of the notes, their appearance on the score, or the way they felt on the keys of the instrument. There are of course no clear types of eye, ear, or hand-mindedness, nor does it seem possible to make accurate analysis of such differences: their chief significance to the teacher is in the suggestion that presentation must whenever possible appeal to several senses.

4. *Differences in age.* Differences in the age of pupils doing the same grade of work result in diverse attitudes and irreconcilable interests. While remarkable ranges of age are unusual, a fourth grade class in which an eight-year-old sits beside a child of sixteen is found occasionally. In many schools thirteen-year-old children are in every grade from the first to the tenth. A pupil of fifteen years is not likely to become enthusiastic about the catchy little devices of elementary drill which are so interesting to classmates of half his age. The precocious lad in a class of over-age eighth-grade children seldom makes the same emotional response to romantic literature that characterizes his retarded but maturer companions. Chronological age and psychological age do not always correspond; frequently a child of twelve is only eight in every form of mental attainment or attitude which can be measured or estimated. Though all pupils in a given grade may be between the ages of eight and eleven, it is highly probable that their psychological age shows a much wider range.

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5. *Differences between boys and girls.* Due to slight original differences, heightened by environment and training, girls are perhaps more conscientious, more suggestible, accurate, observant of detail, emotional, and personal than boys. Boys are more independent, impersonal, and careless of details. Perhaps a more accurate form of the first statement would be that most girls excel most boys in the qualities named, for the boys are more variable, including the best and the worst, the highest and lowest degrees of qualities or attainments.

6. *Differences in physical and sense endowment.* Differences between physically normal and well-fed children and those of poor physique or under-nourished condition are significant in an understanding of pupils. Ability to learn or work sustainedly, resist fatigue, endure without nervousness the excitement or embarrassment of class exercises or criticism are largely dependent upon vigorous physical condition. A special assignment entirely appropriate for a mature and robust pupil might overtax one of nervous or oversensitive organism. Defects of eye and ear should be discovered either by consulting previous records, tests, or observation; once found, children who are short of vision or partially deaf should be given consideration, especially in seating and assignment, to meet their peculiar needs. No properly sensitive teacher readily forgives himself for reproof of a pupil who has not done his work because of inability to see a blackboard assignment nor does he censure a deaf child for failure to execute a command he has not heard. Likewise the stuttering pupil is unjustly dealt with if required to read or talk under the fear of interruption or the strain of excitement. Calm situations, singing or rhythmic exercises, and opportunity to answer questions which may in part be repeated in the answer

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are some of the measures which may help the stuttering pupil. It is the business of every teacher to discover quickly such defects, and, so far as possible, to prevent the inconvenience, loss, or embarrassment which the abnormality causes.

7. *Differences as to discipline.* Pupils who are docile or those who coöperate willingly and intelligently do not become disciplinary problems. Of the troublesome types Bagley lists these: (*a*) stubborn; (*b*) haughty; (*c*) self-complacent; (*d*) irresponsible; (*e*) morose; (*f*) hypersensitive — "touchy"; (*g*) deceitful; (*h*) vicious.[1] It is manifestly better for a teacher to classify or think of troublesome pupils in these terms rather than to say that they are noisy, boisterous, careless, provoking, or mean, because these are descriptive of the disposition and traits of the pupil which lead to habitual lapses or misbehavior. Proper procedure for bringing about better deportment begins with a discriminating estimate of the specific difficulty. If a pupil is persistently annoying is it due to obstinacy or poor memory which causes him to forget previous admonitions? And if it is decided that he is obstinate, is this due to innate perversity, as teachers are sometimes ready to believe, to wicked environment, or to a fixed attitude of evil intent toward the teacher because of a fancied injustice or affront which might be removed by a better understanding?

8. *Difference in ability to do school work.* Because of the individual differences outlined in this chapter, pupils differ remarkably in ability to do the work of the school. It is quite possible to find in most large classes some pupil who has from three to six times as much ability as his least capable classmate. In a given time he can do more and better work in

[1] **Bagley**: *School Discipline*, 219–237.

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every school subject with less fatigue, and is of greater consequence in every game on the playground. His inconsequential classmate, on the other hand, shows little capability or special aptitude, and without being strikingly defective impresses despairing teachers in search of reasons for his incapacity as belonging to the "no-minded" type.

Though the comforting theory that every child may find some subject in which he is able to excel cannot be supported fully, the truth it does contain requires every teacher to pause before deciding that any pupil is impossibly and universally dull. If the records of superior attainment could all be tabulated, it would probably be found that leadership was more often developed from those who made a good school record than from those the school rated as inferior; the teacher's rating of stupidity has never been a passport to later eminence, and too much prominence has been given to exceptional instances in which the school drone became famous. But before complacently accepting his own hastily formed verdict that a pupil is hopeless and hardly worthy of effort the teacher must examine all the evidence. Perhaps irregular attendance has given poor preparation. If so, he might keep abreast of the class if once on their level. If slowness of mental movement is the difficulty, this is inconvenient, but with more time he may even do average work; he may have formed a wasteful study habit which, once broken, might free uselessly expended effort.

Lastly, there are extreme cases of special aptitudes and corresponding lack of ability. Such instances are comparatively rare; as has been shown, what seem to be special aptitudes are often mere whims of child or parent or quite accidental likes and dislikes. Society needs every useful ability

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developed to its maximum, and any failure to arouse or call forth a pupil's best is social waste; no one should be treated as hopeless until every resource has been exhausted to find the thing he can do well. However, in our commendable zeal to equalize opportunity and to find a place in the intellectual sun for all, a comparatively small group of incapable pupils should not rob more versatile classmates of facilities for reaching their much fuller development. In the impossible task of bringing up to grade the very small per cent who can achieve practically nothing, we should not use time which belongs to the guidance of an equal number who are capable of almost unlimited accomplishments.

Exercises

1. "The children with whom we work come to us equipped with many native reactions or tendencies to behave. — Success in teaching depends upon a recognition of these instinctive tendencies, the development of some, the grafting of new but similar reactions on others, and the inhibition of the native reaction and substitution of another in still other cases. The instincts which are of importance in education have been variously named; among those of greatest significance for the work of the teacher are play, constructiveness, imitation, emulation, pugnacity, curiosity, ownership, including the collecting instinct, sympathy, wonder." (Strayer: *Teaching Process*, 15–16.) Show by example or otherwise how each of the tendencies named may be utilized by the teacher.

2. Make a list of experiences, habits, and attitudes possessed by most children at the age of school entrance which should be continued and supplemented. Which others should the school seek to obliterate or discourage?

3. In what respects would a teacher who had grown up in a large family of children be liable to misjudge a pupil who was an

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only child? What differences may be noted between only children and those who have brothers and sisters?

4. If you know any pupils of foreign parentage, make a list of details in which their home environment differs from that of the home in which a typical American pupil of the same grade is developing. In what significant ways are both different from the home in which you grew up?

5. A child says, "I have no head for arithmetic" or "None of my family can spell or write." What significance have such remarks for the teacher?

6. Which phases of arithmetic were especially difficult for you? In the light of your present knowledge what were the specific reasons for your trouble? To what extent can you apply your analysis of the situation to the pupils you teach?

7. Make a critical study of the three most troublesome pupils in your room, considering so far as possible the following:

(*a*) Home conditions, including heredity.

(*b*) Previous school record.

(*c*) Amusements.

(*d*) Associates.

8. Make a detailed study of the home environment of the two pupils in your room whom you consider most and least fortunate and discover as specifically as possible how wide the divergence in opportunity is.

9. How many pupils in your school are better able to discuss current events and have a greater fund of "general information" than the average child of the next higher grade? Of the second grade above? Account for the wider intelligence of these.

10. "The establishment of special schools for subnormal children has been due primarily to sympathy; every social argument valid here is equally in favor of maintaining schools for bright children." Based upon your own observation what are the arguments in favor of this position?

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11. Recall or collect examples of the following:

(*a*) A child using incorrect language because of the irregularity of our language itself.

(*b*) A child seeming impolite by giving full and truthful expression of his own opinion in a situation which made the truth seem inconsiderate or inappropriate.

(*c*) A child over-estimating the importance of some item which honestly appeared to him in a different light from that in which the adult might view it, *e.g.* an exaggeration which seemed to be the exact truth.

(*d*) Children using words incorrectly because of inadequate meaning.

12. Make a list of things which seem less important to you now than they did while you were a pupil. A list of those which now appear more significant. Characterize the two lists.

13. Show a picture to a class; remove the picture and ask questions concerning its important features, mentioning some details not present. Suppose, as an illustration, that the only woman in the picture is bareheaded and that no bird or dog is shown. Ask

(*a*) How many birds in the air? In the trees?

(*b*) Did the woman wear a straw hat?

(*c*) Was the dog before or behind the people?

(*d*) Was the running dog large or small?

From tabulation of the answers what do you discover about the ability of pupils to respond to or resist suggestion?

14. A teacher posted a list of review questions remarking, "It seems to me that any one who can answer these questions should have no difficulty in the examination." Nearly every girl in the class was soon at work upon the questions; a few boys took up the task on the second day. What characteristic difference between boys and girls does this illustrate? What evidence of similar differences between boys and girls in your classes?

15. A teacher said, "You may whisper when it is necessary."

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Most of the pupils understood; one quite honestly asked the following questions:

May I whisper to borrow a pencil?
May I whisper if I want a book?
May I whisper to find where the lesson is?

Which of the mental types referred to in this chapter does this case best illustrate?

16. Are pupils more anxious to have their *side* win or to see their own names at the top of the list? How does the age of the pupils considered affect your answer to this question?

17. How would you explain the fact that some pupils are continually making excuses such as,

I haven't any paper;
I lost my pencil;
May I get my book? I left it in my locker;

while others are not known to make a single excuse of this kind during an entire term?

18. If you are unable to account for a pupil's indifferent work or lack of interest ascertain answers to the following questions:

(*a*) Does the pupil frown, lean forward toward his work, or show inflamed eyes?

(*b*) Does the pupil breathe with mouth open? Does he "talk through his nose"?

(*c*) Does the pupil say "What?" to all questions, read without expression, show postures indicating difficulty in hearing, or complain of earache?

(*d*) How many hours does the pupil work outside of school? When does he go to bed and when get up?

(*e*) What does the pupil eat for breakfast? What for lunch?

19. Make a list of stories or books of fiction which might be helpful to teachers because of their portrayal of child life.

20. "Of equal importance with this attitude of discrimination and differentiation which the discerning teacher will assume toward

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her pupils is the attitude of faith that each and every child may be quickened and saved, as it were, from all the evil influences of heredity, crime and ignorance, and even of shortsightedness and over-indulgence which characterize so many homes. To have faith in the future of uninteresting and unpromising children, to be able to put forth a touch of sympathy and personal interest which will kindle like sentiment in return, is the work of a fine spirit. How little one can accomplish for the life of another unless he has faith in the possibilities of that life!" (Dutton: *Social Phases of Education*, 70.)

What in addition to necessity of knowing the child is indicated in this quotation?

Readings

Adams: *Exposition and Illustration in Teaching*, V (Suggestion).
Colvin: *Introduction to High School Teaching*, II.
Kirkpatrick: *Fundamentals of Child Study*, IV, XV–XVIII.
Perry: *Discipline as a School Problem*, X–XII (Home Environment), XXII (Psychological Age).
Strayer: *The Teaching Process*, II.
Strayer and Norsworthy: *How to Teach*, X (Individual Differences).
Terman: *Hygiene of the School Child*, XVIII (Mental Hygiene).
Thorndike: *Education*, V (Individual Differences).

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CHAPTER III

THE TEACHER'S RELATION TO THE CURRICULUM

The meaning of the curriculum. Curriculum, as used in this chapter, is the subject matter of school education. The original meaning of the term is of more than etymological interest, since it remains the most valuable interpretation. The word meant *a course through which a race was run;* the school curriculum, rather than a measure of content or subject matter to be acquired or in some mysterious way " gotten into the heads " of our pupils, consists of the experiences through which pupils pass. To yield the greatest value these must be wisely selected and carefully arranged in the most economical order. Out of the problems of selection and arrangement of curriculum material grow most of the current arguments and discussions concerning education.

The curriculum as a subject of discussion. This is true whether we examine criticism by leaders of thought who have at least given the matter serious study, or the much larger amount of uncritical comment by those of superficial views and correspondingly radical expression. The former realize that the subject matter in which pupils are taught is of the most far-reaching consequence since upon its choice depends the realization of educational aims. The latter, vaguely aware of the same view as to general aims, are likely to be acutely and obstinately conscious of their attitude toward

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educational details; they can more readily attack some bit of subject matter which seems silly or useless than by keener analysis of the situation discover the shortsightedness of some teacher whose vision does not extend beyond a single textbook or permit omission of textbook material not adapted equally to the needs of every school or pupil. No teacher, without knowing the nature and purpose of the curriculum, can do the best work, and no one can be intelligently abreast of current educational literature without at least an elementary understanding of the problems of modern curriculum making and opposing viewpoints as to their solution. It is the purpose of this chapter to discuss briefly some curriculum questions which touch the work of the teacher.

General content of the curriculum. The curriculum consists of the organized body of subject matter which racial experience has pronounced worthy of being passed on from one generation to the next. No generation ever transmits all the traditions intrusted to it nor all of its own discoveries, for in solving its problems humanity often uses methods which appear inadequate in the presence of other solutions. Every great invention renders practically useless much of what was once well worth teaching. Generally speaking, what is of greatest value is preserved, though the advantages of an innovation must be very great to enable it to displace the traditional without a struggle.

Use of curriculum determined by biological factors. The curriculum as an organized body of subject matter achieves its function by virtue of two biological facts:

(*a*) Acquired characteristics are not conveyed by heredity; education either informal, — "picked up" by experience not educatively directed, — or formal through the school, must

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be acquired by each individual; all babies have all to learn, the child of the most cultured and capable, as well as of the most ignorant and inefficient parents.

(*b*) The long period of human infancy insures abundant time for securing experience. Infancy as used here signifies the period required to reach adult development; in this sense a cricket has practically no infancy and a horse a few years; a boy remains an infant about twenty-one years, with a tendency in most civilized lands to push the period for full responsibility somewhat later.

The important characteristic of human infancy is its capacity for education, very slightly displayed in lower animals. This, upon analysis, proves to be dependent upon the far richer endowment of original tendencies or instincts possessed by the human infant. While a cat or a dog has fixed instinctive reactions, its "mind always being already made up," the more numerous undirected instincts of man make it possible to modify human behavior by practice which fixes desirable tendencies, and by allowing others to disappear through disuse. As an example, a child may become habitually truthful in conversation by encouraging his natural tendency to be straightforward in all statements, or by removing all situations which might give opportunity to indulge his native bent for exaggeration. During the long period of human infancy upon the basis of instinctive behavior, original tendencies develop and become fixed as habits, memories, knowledge, attitudes, and ideals. The sum total of these changes made during the plastic stage of the individual's life constitutes education.

The curriculum is constantly changing. It is in the nature of the case that the curriculum must be constantly under-

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going change; what is adapted to the needs of one generation is always in part useless for the next. The great body of material remains fairly constant; to the teacher who is weary with the pupils of many school generations there may appear to be no change; in certain moods it seems to be "the same old stuff"; at other times it is realized that old things become ever new to each succeeding class since the pupils are "new" and the presentation need not remain forever the same. On the other hand, frequent use in educational literature of such expressions as "revolution in education" and "the new curriculum" might lead one to suppose that the subject matter of education had changed very rapidly.

Curriculum changes are gradual. Introducing new subjects into the curriculum is far from being synonymous with making real changes in content. Upon the type of educational reformer who condemns subject matter merely because it is traditional, this lesson of curriculum history is lost; introduction of half a dozen new subjects within a few years seems to represent a decided break with the past, but examination of actual schoolroom performance shows that the change, though very great, is less than names of subjects indicate. For fifty years or more "the new education" has been a term of respectably indefinite usage, and still it is safe to assert that most of the pupils in the first six grades of the public school spend three fourths of their energy upon the same type of subject matter as that in common use at the beginning of this period. For the most part this is not because of unwarranted conservatism or failure to keep abreast of the times but it is owing to the fact that a large part of this material was then, and is now, fundamental and

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essential. The significant change most needed is to do better what we have long been trying to accomplish.

Growth in amount of curriculum material results in problems of selection. Though sweeping modifications in the curriculum are not wrought by a single stroke, very noteworthy changes are being made of which every teacher should be informed. If we go far enough back in curriculum history, it is possible to find a time when not much was known that could be profitably taught in school. Medieval encyclopedias were supposed to include everything; as late as Bacon or Milton it was thought feasible to " take all knowledge for one's province " — for one man to learn all that was worth knowing. Even after the amount of material had greatly increased, conventional notions of what was appropriate in school kept the curriculum relatively narrow in extent.

With the development of the modern democratic public school, increased demands corresponding to wider social changes have brought new subjects and modified the old. Curriculum material is more abundant than any possibility of its utilization; no conventional notions are powerful enough in their influence to shut out increasingly direct impress of social life upon the course of study, but conservatism, often of the teaching craft itself, is a very real force when changes in the curriculum are contemplated. The accompanying illustration may show how a long-accustomed way of doing things gains a safe position as the best way. When printed books began to come into use their advantages over those painfully copied were such that the industry of producing hand-made books declined, and many of its secrets, not being worthy of transmission, have been forgotten. However, the change did not come without opposition from

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those of the old order. Many of the scholars of the time — and who better than scholars should be authority on books? — said, " The old books are more beautiful, more convenient, more easily read, and they cost more, which we consider a decided advantage, for who wants books so cheap that everybody will be reading? " Thus traditional influences, always powerful, are often strongest among members of the teaching profession; it has sometimes been the conservative attitude of the schoolmaster himself that has resisted changes in education until forced through other social pressure.

Specific changes in curriculum due to elimination and addition. Progress in modifying the curriculum comes through elimination and through addition of new material. Since lack of time limits the extent of what can be used, every addition necessitates a corresponding subtraction. Enriching the course implies redistribution of emphasis. Entire subjects are seldom discontinued; it is usually single topics, such as those given in the following examples, which are thus disposed of. A few of the types of material disappearing from the course of study are mentioned here. With a little effort others may be listed by any observant teacher who reads even a small amount of recent educational literature.

(*a*) Many units of subject matter once practical, perhaps, but no longer useful, are being discarded; examples of this kind are the problems of driving geese found in older arithmetics, best known to the present generation as something found in the dusty old books studied by our pioneer ancestors. As fewer men drive geese, such exercises lose their relation to life.

(*b*) The foregoing topic is out of date; others used by a small minority of those who learned them, such as Troy and Apothecaries' weight, have been dropped because it has been

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realized that the use of so much energy by all in learning what is of use to only a very small professional group is not justifiable.

(*c*) Still other topics may have been adapted to the capabilities of the comparatively small intellectual group who went to school before the days of popular education, but prove beyond the grasp of so many in the democratic public school that they have been eliminated or postponed for the supposedly more select group of high school or college; of such nature is much of the old grammatical analysis; arithmetical processes better comprehended through the avenues of algebra or geometry are of the same type.

(*d*) It seems, further, that occasional units of subject matter have been included in the curriculum because of the eccentricity of a textbook writer, or his demand for a severely logical structure which may never have conformed to reality. As an example, the rule is found in many old grammars and rhetorics that a preposition should never stand at the end of a sentence, in spite of the fact that first-class writers of English have always regarded a preposition as "a good word to end a sentence with." The over-elaborated inflection of grammar carried over from the classic languages is another example; if most inflections for case and gender are lacking in English nouns it is useless to teach them as mere forms. Especially numerous are such examples of foisting personal experience upon a long-suffering school public in textbooks on physiology and hygiene. As scientific knowledge replaces individual opinion, we may expect better things in the comparatively new subjects, and in all a pragmatic age is applying its relentless "why" in getting rid of such curriculum excrescences.

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Conservative and progressive attitudes toward new subjects. Social changes which have left many units of subject matter without function have also developed much new and exceedingly valuable material which is gradually being incorporated into the curriculum. History, physiology, drawing, music, manual training, and elementary science under various names have been added to the elementary school curriculum; music appreciation, sex-instruction, physical education, agriculture and other forms of prevocational education, as well as moral training and vocational guidance, are now presenting their claims. Elimination has not proceeded as rapidly as addition and the overcrowded curriculum is the result; pupils are accused of attempting too many things and of doing nothing well.

In the arguments concerning what shall be eliminated, retained, modified, or added to the curriculum " what knowledge (experience) is of *most* worth? " becomes the center of the controversy. For the older subjects the conservative (not of necessity an " old fogy ") says, " This material has been tried and found good; most of the eminent men now living studied it and perhaps owe much to the curriculum through which they passed. I studied it and have found it as valuable as anything in my education. It is thoroughly organized; well-trained teachers and good textbooks insure its proper presentation. Your proposed new material is doubtless of value, but it is not well systematized. Few who can teach know anything about it and such books as have been published are very poor. There can be little mental training in a field where no better school work is possible. It should be taught by parents, by special teachers as an accomplishment, or learned in practical trade experience."

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The progressive (not of necessity a radical) answers, "What you say about the material of the present curriculum is true; it should be remembered, however, that while *you* profited greatly by study of the older subjects many of your classmates cared little for them; while many teachers do excellent work with these, not a few are treating them in a dry, formal, empty fashion since they have little relation to modern life. Ideally, perhaps, some of the new material I am pleading for should be taught in the home but it seldom is; some of it may be picked up practically but that method is uneconomical and too uncertain, and the new material is of so nearly universal value that it is unfair to leave it for those who can employ private teachers. 'Squeeze your subject over a little' or eliminate parts of it so that more valuable subject matter may find a place; let the old take less time and give the new a little. Good teachers and good books will soon be available. So far as mental training is concerned, that is not in the subject but in the teaching; no branch of study has a monopoly of qualities that train the mind." By such general arguments as to its content is the reorganization of the curriculum attended. Important differences of opinion concerning the general function and character of curriculum material will next be examined.

Opposing theories; cultural contrasted with vocational curriculum. In supplying content for ultimate educational aims noted in the introductory chapter, one soon becomes conscious of the fact that many long-discussed questions remain unsettled. This means that excellent argument may be produced to support contending opinions. Only a one-sided debate could grow out of the question of the necessity of having well-trained teachers; method discussions now

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arouse little fighting zeal because of a deep-seated conviction that no plan is universal or indispensable; but in relation to the curriculum there are sharper differences of belief upon important issues. It may easily be seen that the differences which divide curriculum thinkers according to the accompanying lists are vital since they represent opposed opinions concerning the function of education in society.

Education for Culture Should be		Education for Vocation Should be
Theoretical	rather than	Practical
General		Specific
Indirect		Direct
Abstract		Concrete

Advocates of the opinions represented in the cultural list are inclined to stress knowledge and education for leisure; of the vocational, ability to do and earn wages. The first stresses the value of a trained mind well equipped with general notions and stands for late specialization; the second emphasizes specific content which may be applied and calls for earlier specialization. From the standpoint of mental differences the first is more concerned with idea thinkers than with thing thinkers or those who must immediately translate thought into action. According to social and economic status the first is likely to have in mind the child who remains long in school and is preparing for a professional career, while the second includes in his thinking those who will leave school early to enter various trades.

In considering the opposing viewpoints outlined in this section, as well as those in current educational literature in which this chapter is designed to interest the reader, it should

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be remembered that differences of opinion are often linguistic; this is nowhere more evident than in the use of the terms in the foregoing opposed lists: two persons who seem to differ radically as to whether school education should be made more "practical" often have remarkable differences of opinion as to what the term "practical" includes. In the same connection it should be noted that extreme positions are seldom taken by thoughtful writers; making due allowance for radical statements of merely rhetorical nature, it is usually found that neither party to a controversy over the curriculum would seriously propose sudden or revolutionary changes in established practices. The declaration that half of the present elementary school curriculum is "dead wood" does not mean that the one who pronounces so unfavorable a verdict would replace half of it with something else. Such utterances are usually vaguely indicative that much of what is now used is of no great value and could well be discarded.

Those who believe in a general curriculum rather than direct or specific preparation claim that children in the elementary schools are too young to specialize or choose a vocation, and too immature to be trained effectively if one were selected. Much of what is proposed as vocational has no great educational value and could be more economically acquired while in the shop or at work. The value of the school curriculum consists largely in giving pupils acquaintance with some of the great thoughts, ideals, and achievements of the world with which they would never come in contact in workaday experience. Early in life they will feel the narrowing influences of their calling in any case; as the routine of doing over and over the same thing is forced upon them and gets into their very soul, it is important that they be larger than

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their work. For adequate participation in civic and social life, one must have experience extending beyond the walls of the shop, knowledge not bounded by market reports or rotation of crops. " Born an American, died a mechanic, a farmer, a dentist " represents the inevitable tendency of each to become his chosen work. Let it be at least, " Born and educated an American." Defer the day of narrow interests awhile. Thoughts and conversation about things not in the daily routine contribute more to good citizenship and an understanding of " who is my neighbor " than the petty gossip of daily occupation. Why spend school time upon what will be many times over-learned?

Naturally those who favor giving the curriculum a more direct training value are constantly alleging that the more general subject matter " does not function." Not being used, it is soon forgotten or remains a thing apart from life, of no consequence except at school. And whatever use *might* be made of such general material is only partly realized because too large a per cent of children, perhaps on account of the curriculum itself, leave school so early in life; they are unwilling to remain in school studying subjects which seem to lead nowhere.

Present use contrasted with preparation: the problem curriculum. A further difference of opinion relates to the extent to which preparation for the activities of adult life can be made an outgrowth of the problems of childhood. This is quite as much a question of method as of curriculum. There is certainly much to be said in favor of an arrangement in which a pupil really needs a unit of subject matter in his " business." If it is evident that lesson material is to be needed in playing a game, it will be learned in the minimum

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of time. The advocate of the "problem curriculum" makes the following claims:

(*a*) If material is an outgrowth of the child's own activities, motive for its mastery exists. Learning the use of tools in order to build a playhouse; of arithmetic to count the cost; and writing real invitations to a school party are examples of motivated school subjects.

(*b*) Material thus learned becomes an integral part of the pupil; it comes to him as his other experiences have come — not in isolation as reading, language, or certain rules in arithmetic or grammar, but as a means or part of a way of doing things. If the pupil's education has consisted of solving his own problems, he will never say to his employer, "I made that mistake because I did not remember whether to use the rule that used to be at the top or the one on the bottom of the page," or "I didn't know whether to use square or cubic measure."

(*c*) If considerable time elapses between acquiring and using knowledge, much is sure to be forgotten; this type of curriculum brings use so close to learning that it is sometimes said to substitute doing for listening.

(*d*) It may also be shown that some of the material taught because it *will* be needed in later life is quite beyond the comprehension of pupils; in such cases what seems to have been forgotten was in reality never learned.

Counter to these claims, it is said, material adapted to immediate needs of children is sure to be of haphazard, unorganized nature; learning entirely through the child's problems is very slow; since most problems do not arise in child life until the teacher painfully devises situations in which they will confront them, the practical difficulties of such an

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arrangement altogether outweigh any theoretical advantages. Again, in formulating any problem curriculum, much must be left to the individual teacher, which means that a great deal of personal, local, and insignificant material will be taught. It is confessedly impossible to convert all that should be part of the curriculum into experience which the child can now use. It is more than doubtful whether pupils are inspired by a strong enough motive to master effectively such necessary bits of subject matter as the multiplication table or to correct spelling habits because of a desire to solve any or all of their own little problems.

It is likewise a question whether children work at acquiring such essential school arts with more zeal than under the inspiration of ordinary school incentives. The so-called problem curriculum seems to be a device of great value in vitalizing certain units of subject matter in which something is to be made or done, and sometimes in language when ideas are to be turned to immediate account. Its strength is found also in the hold it takes of community life outside of school.

The teacher's relation to criticisms of the curriculum. As has been noted, much criticism of the course of study is made by laymen. Some of this is very intelligent and worthy of study; some, on the other hand, is of little force but still merits sympathetic notice since it enables teachers better to understand the parents of the children they teach. In no other country perhaps is there so much discussion of education by all sorts and conditions of men and women. A European asking for information concerning American education was told: "Ask the first man you meet on the street; every one knows how to conduct the schools in the United States." This strong interest in the public school is one of the great

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educational assets of our country, and when shown by honest even though unintelligent and unfriendly criticism, should be respected, understood, and when possible utilized to increase popular knowledge of the problems and needs of the schools.

It is the business of teachers as well as administrators to take discerning notice of criticisms of the course of study. Such criticisms are seldom conveyed in the form of outright fault finding, and in fact are often in a decidedly humorous vein like the examples at the close of the chapter. A very common type is that of the business man who employs part of the product of the school. His usual criticism is in essence that the school is teaching too many subjects and not doing fundamental work as well as it once did — while he was in school perhaps. Specifically the fault is found to be the results in writing, spelling, and arithmetic. "He cannot write a decent letter nor add a column of figures correctly — what less could reasonably be expected?"

Occasionally force of criticism becomes so strong as to result in a demand through a local board of education that more time must be devoted to these subjects — usually by all pupils regardless of their proficiency. Such demands, as a rule, result in a slight improvement of a few pupils, much loss of time by others, and a considerable degree of dissatisfaction upon the part of teachers. Some of these unwise regulations would be rendered unnecessary if teachers were more ready to profit by local criticism and even sometimes to answer it effectually.

The business man's criticism just mentioned might not be hard to refute. He is likely to consider his present ability in spelling or arithmetic to be practically the same as that with which he left school, whereas he has probably acquired much

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of what he uses since leaving school; perhaps, too, outside of the very narrow range of accomplishments necessary in his business, he is himself neither very intelligent, quick, nor accurate — not more so than the mistake-making pupil he has employed and found wanting. The best part of the school product is not usually at his command, and it is hardly fair to judge the school by the economically unfortunate who must early begin to earn wages, or those of the mental type that find all learning irksome.

Absolute accuracy, such as is sometimes demanded, is hardly to be expected of fourteen-year-old children — possibly not more to be looked for than perfect steadiness in a two-year-old colt. And, to the oft-raised question "Are the schools doing as thorough and accurate work as formerly?" the answer must be given: "Such tests as have been made, using old sets of examination questions and examining old letter files, indicate that they are. More good spellers and writers are being trained by the schools every year. Of course many now leave without acquiring accuracy of any sort, but that has always been the case. The modern school must take all the children of all the people and do its best for them. As public school education is made universal and compulsory, it is only reasonable to assume that a considerable per cent of the increased attendance is among those for whom the school can do the least. It is unreasonable to expect a finished product, regardless of the quality of the raw material."

But standards of attainment in fundamentals are by no means as high as they should be and must become, and another criticism in the form of numerous school surveys has been driving home the lesson of the need of more frequent and effective drill upon the same subjects in which the business

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man has most sharply criticized results. To the wise teacher this calls for a shifting of emphasis as to parts of the curriculum and to a greater degree more efficient use of time through vitalized methods.

Teacher's relation to the local course of study. (*a*) The specific course of study adopted *for* a group of teachers must be adopted *by* them as well. That is, the school's best interests demand that all shall coöperate willingly to carry out its provisions. It may be unsatisfactory in many particulars — not as good sometimes as the teacher could have made — but once adopted by duly constituted authority it should be followed. Open or public unofficial faultfinding is bad professional etiquette and usually accomplishes nothing. No good course is minutely mandatory in its provisions; this renders it easier to follow, permitting the teacher to omit what seems non-essential or is sure to be presented later, and to emphasize what appears most vitally significant. By pursuing a liberal attitude, interpreting broadly and supplementing freely, good teachers are constantly making rich and effective courses out of those which are meager enough as printed.

(*b*) In making an honest effort to use a course of study, thorough understanding is an important step. Frequently a new course is condemned before being comprehended. Many are temperamentally set against change; their first reaction toward any innovation is negative. If such persons render a verdict before thorough and intelligent study, it is almost certain to be unfavorable. A group of this type, after indulging in every form of pedagogical lament because they believed essential material had been omitted from a new course of study, later found it without change except as to

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page numbering. A common complaint from rural teachers is that the state course of study "may be very good, but does not fit the country school." In helping such teachers county superintendents often find that the complainants have not read their course and even express honest surprise when valuable features new to them are pointed out. Under present rural conditions an essential part of the preparation of every teacher should be several months spent in mastering the course of study in use. In graded schools it should be remembered that understanding the course of study for a given class is not like the desultory reading of a detached chapter in a book; what precedes and follows needs to be thoroughly understood, and various sequences and correlations between subjects and grades must be thought out.

(*c*) Teachers should aid in revising or modifying the course of study. It is only the worst course that cannot be improved, and only the poorest school officials who will not listen to reasonable suggestions from teachers who know the material they teach as no one else can. To render effective their participation in course of study making, teachers' suggestions must be tangible and positive. To say, "I don't like this course of study; it is too obscure," or "It has too much in it" is of much less value than to state specifically wherein the meaning is not plain, or to name the material which could advantageously be left out.

Exercises

1. In some countries promising children, especially those of well-to-do families, are educated for leadership with a different curriculum from that in which the rank and file are trained. How does the school exercise its selective function in this country?

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2. A useful classification of curriculum subjects is that of *form* and *content*. Form or formal subjects are those used as a means. Thus penmanship is considered formal since, as a rule, one writes, not for the sake of writing, but to express or record something. Content subjects contain information or enjoyment worth while in itself; history and literature are content subjects. In general, form subjects are those we do; content those we know or enjoy. List the elementary branches as belonging to the form or to the content group; then show that each contains elements of both form and content.

3. What difference exists between a course of study based upon the "present need" theory and one upon the "future use" theory? After reading the accompanying quotations state the arguments for each of these types of curriculum.

(*a*) "The conditions may be reduced to two: (1) The need that the child shall have in his own personal and vital experience a varied background of contact and acquaintance with realities, social and physical. This is necessary to prevent symbols from becoming a purely second-handed and conventional substitute for reality. (2) The need that the more ordinary, direct, and personal experience of the child shall furnish problems, motives, and interests that necessitate recourse to books for their solution, satisfaction, and pursuit." (Dewey: *The School and the Child*. London, 1906. 123.)

(*b*) "Mr. Dewey, in other words, would have the mastery of race experience await upon the exigencies of individual need. That race experiences are assimilated most readily in direct relation to these immediately felt needs it would be futile to deny, and we have gladly given credit to Mr. Dewey for enriching educational theory with this important truth. Certainly no one has done so much as he to clarify our thinking as to what really constitutes a 'real situation,' — as to what is really meant by the pedagogical dictum, 'Proceed from the concrete to the abstract.' But even in Dewey's teachings what constitutes a 'real situation'

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is not always easy to determine; and here, as elsewhere in education, there is danger of pushing a good principle far beyond the limits of its economical application. Mr. Dewey's theory, as most of his readers will interpret it, leaves no place for two fundamental educational needs: (1) the systematic mastery of race experience during the period of childhood and youth; and (2) the insurance of a relatively large number of common elements in the culture of all the people. These aims are truly difficult of accomplishment, but Mr. Dewey's doctrine makes the difficulty so great as in effect to constitute an impossibility, — and this it is not, unless the ideal of democracy itself is an impossibility; this it is not if the testimony of actual experience in teaching children and adolescents is to be trusted." (Bagley, in *School and Home Education*, October, 1915.)

4. Perhaps the majority of persons who are asked what general changes should be made in the elementary curriculum declare themselves in favor of "more practical education." This appears reasonable enough until the inquiry takes the form, "What is practical?" If the term is interpreted to include only what helps in gaining a livelihood or "making money," our civilization will become, according to Mr. Balfour, "only an elaborately organized barbarism." Among the less direct but most important purposes of education in our democracy are the following:

(*a*) An acquaintance with our national history and the meaning of political liberty as Americans understand it.

(*b*) Destruction or prevention of provincial, racial, and class prejudices through increased sympathy and coöperation because of an understanding by each of the ideals, attitudes, and pursuits of all.

To what extent can these purposes be realized by means of an extremely practical curriculum?

5. Try to think of subjects or topics you learned under a good teacher which have been entirely useless to you. What is meant

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by "entirely useless" in this case? What better could you have been given?

6. What relation can you discover between the present course of study and the fact that so large a number of children leave school before completing the elementary grades? Is your opinion based upon mere impression, unverified statements of radical theorists, or upon specific evidence?

7. It is sometimes said that no course of study can be devised which will meet the needs of more than one locality; granting that the content of any course of study must be *applied* locally, answer the following questions:

(*a*) Should different spelling lists be provided for city and country? Which words in a given spelling book of your acquaintance should be omitted in each case? Why?

(*b*) What per cent of the time devoted to history should be consumed in a study of the history of your village, town, city, or community?

(*c*) Which problems in the arithmetic you studied or are now teaching are useless in your community but of great value elsewhere?

(*d*) Which is of greater value to a pupil, time spent in a thorough study of the geography of his own town or county in which he will probably spend his life or of the country and the world, most of which he will only read about? In answering this question consider the fact that he will in both fields "pick up" much by practical experience and reading the newspaper. In this connection how much of the content of the geography course adapted to your vicinity would be unsuitable in a similar community a hundred miles distant?

(*e*) In the light of the foregoing answers what per cent of the content of a good course of study is needed by all the children in your state and how much of it should be local?

8. It has been established by numerous studies that more children fail of promotion because of arithmetic than on account of

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any other study. What may be said in support of each of the following reasons for so many failures?

(*a*) Arithmetic is a more difficult subject.

(*b*) Children fail in arithmetic because they are unable to read rather than because of insuperable mathematical troubles.

(*c*) Because of the nature of the subject results are more easily tested than in other branches; children may fail as completely in other subjects but are not found out.

(*d*) Teachers are more poorly qualified to teach arithmetic than other subjects.

9. Placing a new subject in the course of study does not insure getting it into the lives of pupils. This may be due to poor organization of the subject itself, lack of acquaintance with the subject upon the part of teachers, or unwillingness to teach it. Give an example of the introduction of a new subject which was more apparent than real.

10. From current newspapers select criticisms of the curriculum. Are they mainly favorable to greater emphasis of the "new" or of the "old" subjects? Notice that many of these take humorous form as in the following:

(*a*) His Training. — "Well, boy, what do you know? Can you write a business letter? Can you do sums?"

"Please, sir," said the applicant for a job, "we didn't go in very much for those studies at our school. But I'm fine on beadwork or clay modeling." (*Louisville Courier-Journal.*)

(*b*) A Parent's Plea. —

My boy is eight years old,
  He goes to school each day;
He doesn't mind the tasks they set —
  They seem to him but play.
He heads his class at raffia work,
  And also takes the lead

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At making dinky paper boats —
But I wish that he could *read.*

They teach him physiology,
And, oh, it chills our hearts
To hear our prattling innocent
Mix up his inward parts.
He also learns astronomy,
And names the stars by night —
Of course he's very up-to-date,
But I wish that he could *write.*

They teach him things botanical,
They teach him how to draw,
He babbles of mythology
And gravitation's law;
And the discoveries of science
With him are quite a fad;
They tell me he's a clever boy,
But I wish that he could *add.*

— P. McArthur, in *Life.*

Quoted by permission of *Life.*

Readings

Bagley: *Educative Process*, I–III.
Butler: *The Meaning of Education*, 3–15.
Fiske: *The Meaning of Infancy*, III.
Ruediger: *Principles of Education*, X.
Spencer: *Education*, 1–87.
Thorndike: *Education*, VII–VIII.

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CHAPTER IV

THE TEACHER IN RELATION TO EXTERNAL ELEMENTS

THE large number of elements of the school situation treated in this chapter include those somewhat external to the teaching itself, which involves primarily the child, the teacher, and the course of study in action. Though no hard and fast lines can be drawn in classifying externals, convenience may be served by discussing them in four groups.

In the first of these, embracing such matters as the school site, building, and heating, the teacher is limited by material fixtures — resources they may be called — which show a tendency because of poorly executed plans or of expert prevision to pass over into the field of permanent liabilities. Thus a schoolroom which is dark or ill ventilated is a constant danger to pupils' eyesight or general health; narrow stairs, inadequate exits, or infolding doors become sudden dangers in case of fire or panic. The second group of external elements has likewise a material basis in the form of equipment, but is more closely related to teaching itself; in this will be considered blackboards, maps, charts, the library, and other accessories which teacher and pupils use in instruction or as educative environment.

In the third and fourth divisions of the chapter the discussion will relate to such parts of the teacher's work as have to do with administrative organization and procedure, including

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measures necessary to conserve the health of pupils. Though not related directly to instruction, much of the success of teaching depends upon their effectiveness. In these, subject to the limitations imposed by material environment discussed in the first two divisions, the teacher is supreme, responsible alike for success or failure.

A. Fixed Elements of School Environment

Why teacher's ideals should be intelligent concerning school environment. With regard to the first of these groups there is little need for a lengthy discussion in a work of this kind. The school site is chosen, the building or room has its shape, lighting, heating, and ventilation — good or bad — before the teacher takes up the work, and no matter how nobly dissatisfied one may be, what is fixed remains fixed. And though there has been marked improvement in the attitude of the public, school teachers and officers are not always accorded effective attention when new sites are chosen or new buildings constructed. Yet because of the occasional possibility that a word spoken in season might result in better housing, and because, in spite of limitations, alert teachers can often improve the physical environment of their pupils, it is worth while to present the essential facts as to what is approved by our best school authorities. The ideals of teachers are powerfully influenced by the environment in which they attended school; a statement of accepted standards affords a means of testing these ideals as well as providing a measure of a given school plant.

The school site. The school site should of course be accessible, though this should not be taken to indicate the

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geographical center nor the center of population in all cases. The "central location" idea too often leads to neglect of more important factors. From the standpoint of health, a timely consideration of water supply, soil, and drainage, nearness to swamps, dusty roads, air-obstructing cliffs or forests in the country, and factories of various kinds and high buildings in the city are of vital importance. The presence of distractions should be guarded against.

On a one-acre triangle inclosed by three railroads stands a small ward school building. Every pupil in the upper grades learns without a teacher to draw pictures of engines, collects engine numbers, counts cars, spends many patient hours watching for expected regular trains, and the bolder spirits develop no mean ability in "hopping" trains. In a country school, so located as to command view of a long stretch of much-traveled road, one teacher scolded, another whipped, and a third pasted newspapers over the windows to prevent the pupils staring at passing traffic. All were wrong, but none more foolish than the community which placed and constructed the building.

The school ground. The school ground should be large enough to afford a playground and some room for ornamental gardening as well as a school garden wherever the latter project is practicable. Making a ball ground of a farmer's meadow or wheat field, breaking windows of near-by buildings, and playing in streets where truck drivers have a legal right to pursue their business without danger of running down children or being hit with stray missiles, are all circumstances which it is part of the teacher's business to prevent, but most troublesome cases would never occur if the community had given pupils the simple justice of providing a place to play. Play-

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ground considerations require, in addition to size and reasonable levelness, that the ground shall not be rendered useless during months of each year because of mud or water. By the use of gravel and concrete, grading, and attention to drainage, it should seldom be necessary for pupils to do without an out-of-door playground long at a time. Esthetic standards also protest a site so flat that it cannot be drained.

Proper moral environment. Finally, proper moral tone of the school's environment lightens the teacher's work and makes character results possible. Without being more specific it may be stated generally that no school should be located near a loafing place of men and youth. In addition to the low character sure to be part of conversation in such places, much of what is innocent enough in its nature is misunderstood and for that reason better unheard. As a corollary to what has been said no haunt of idlers or resort for leisure hours should be allowed to develop in great proximity to the school. This is one of the arguments given for placing the consolidated school in the open country rather than in a village, however small.

Improvement of school site and ground. 1. *School gardens.* It is usually possible for the rural teacher to make improvements in the school ground and its use. Because of comparatively short terms, school gardens are often impractical. The patches of weeds into which they soon evolve while the teacher is at summer school possess little educational and no esthetic value; a busy community forgets the school-yard garden in the presence of greater economic interests. When adequate provision is made for "seeing the school garden project through" it is very much worth while.

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2. *Arbor day.* The meager results often attending Arbor Day celebrations are due as a rule to unwise selection of varieties of trees, improper or hasty planting, and failure to give newly planted trees needed attention or at least immunity from destruction outright. After a serious attempt upon the part of a teacher and school to start trees or shrubs, during succeeding years all is neglected: pupils make play horses of promising growths and teachers even prune trees to aid in discipline. When rural teachers are more permanent in tenure, their Arbor Day work will be better done. What has been said is not intended to disparage school gardening or Arbor Day celebrations, for both may yield excellent dividends to school and community. Permanent responsibility is needed, without which little is gained by starting these enterprises.

3. *Other measures of improvement.* There are numerous other measures which even the one-year teacher can take to improve the external condition of building and ground. Without discussion a few of these are mentioned.

(1) Take vigorous interest in the annual clean-up day now so generally observed. It may well be argued that "keeping up is better than cleaning up," or that such campaigns are the affair of the local community and should not be made part of the already large list of the teacher's responsibilities, but the "God of things as they are" gives teachers many duties not expressed or implied in contracts.

(2) Persuade the community to paint the school building, give it a new roof, or make other constructive improvements. Adding a basement room is often one of these possibilities.

(3) In some thousands of cases remnants of once-needed

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fences should be removed; the ash pile at or near the front entrance should be turned into needed walks.

Other improvement measures are sure to suggest themselves to the alert teacher. An observing visit to a school plant which embodies most conditions as they ought to be is likely to open one's eyes to removable defects in the environment of his own school.

Size and shape of classrooms. The proper size of a classroom may be stated as requiring from fifteen to thirty square feet of floor space per pupil, or at least two hundred cubic feet of air space for each. Considering shape as well as size, the oblong rather than the square type meets requirements for lighting and acoustic effects. A typical room should be from twenty-eight to thirty-two feet long, not more than twenty-four feet wide, and unless unusual lighting conditions are present, about twelve or thirteen feet high. In a room more than twenty-eight feet long many teachers find it difficult to make their voices carry to the rear seats, pupils who should be learning to talk with ease are not heard without what seems to them shouting, and pupils in the rear of the room are unable to read blackboard, chart, and map material. Though the classroom teacher cannot change the shape or size of the room it is often possible to shorten a room that is too long or by changes in seating or arrangement of furniture to enlarge one which is too small.

Schoolroom lighting. Proper lighting involves amount, direction, and control. The amount of light should be sufficient to prevent strong shadows when a pencil is held vertically above a sheet of paper on the surface of a desk. In general, window space should be from one fourth to one sixth

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as great as floor space, depending to some extent upon the presence of projecting walls, trees, or other buildings. Light should be admitted from the left and rear — never from the front; windows should be high and extend nearly to the ceiling; cross-light should be avoided and windows massed together, approaching a unilateral arrangement where possible. Shades can be used to control the amount and direction of light, the most practicable usually being those which roll both up and down from the middle, thus making it possible to exclude a glare or the direct rays of the sun by shading at will any part of the window. To conserve light, walls should be tinted buff or a very light green and the ceiling should be white. East or west lighting has advantages over that from north or south, the latter being especially objectionable because of the impossibility of avoiding direct rays and strong reflections.

The teacher cannot make over buildings, but there is much room for vigilant use of shades to secure the best light possible at all times of the day and for moving pupils from badly lighted seats. It is little less than criminal to permit children to study with the sun shining upon the page or while they are facing direct light. Young teachers sometimes have an undefined feeling that pupils above the primary grades should know enough to protect themselves against such grossly bad conditions, but this they may not be depended upon to do. It is difficult for most supervising officers to discover much professional ability in teachers who do not develop in the use of simple precautionary measures required for conservation of pupils' eyesight.

Seats and desks. The best school seats and desks are single and adjustable. For the double there is but one significant argument, — material economy, — while there are

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numerous disadvantages; many pupils find it hard to do independent work; an orderly child is often seated with one who keeps an untidy desk; in the modified lottery of getting located, clean pupils do not always draw clean seatmates; neighborhood feuds and racial enmities cause trouble from those who do not wish to be neighbors, and contagious diseases have increased likelihood of being spread. Adjustable furniture of good construction makes it possible for every pupil to be comfortably seated, the height of both seat and desk being changed several times a year if necessary to keep up with rapidly growing children. In the absence of adjustable furniture much can be done by shifting pupils so that they occupy the most suitable seats available. As an outline for the diagnosis of seating defects the following is offered:

1. *Seat too high.* Pupil's feet, not touching the floor, dangle, swing to and fro, or seek support upon next desk; or pupil "slides down."

2. *Seat too low.* Pupil "doubles up like a jackknife" — leans forward.

3. *Desk too high.* Writing arm and shoulder higher than the other, liable to induce spinal curvature.

4. *Desk too low.* Pupil leans forward upon elbows — stoops.

5. *Desk too far from seat* (called "plus" distance). Pupil sits on edge of seat or leans over against desk.

6. *Desk too close* (too much "minus" distance). Cramped and uncomfortable — difficulty in getting into or out of seat.

By no means all the awkward, sprawling, unhygienic postures of school children are caused by unsuitable furniture, but in so far as they are, they should be used as an index of the remedy. In addition to the danger of physical deformity,

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no child does his best work when his seat or desk impels him daily to assume bad posture. If adjustable seats are used, it is the teacher's business to see that at all times they meet the needs of their occupants; if non-adjustable furniture is still in use, the best possible apportionment according to sizes must be made. If no other means avails to get every pupil's feet comfortably flat on the floor when the knee is bent at a right angle, a foot-rest should be provided.

The recent evolution of school furniture has resulted in many forms of desks and chairs. With the exception of a brief period when vertical writing was in vogue most of them have provided a top that is level or nearly so; a few include the feature of an adjustable top, designed to accommodate itself to different types of work. Such "improvements" are a decided gain unless they introduce other elements of weakness. Thousands of desks which have gone into use during the past ten years render thoroughly good penmanship impossible because of their unsteadiness: no one can write without a steady support, even on a desk which has sacrificed its solidity to more modern notions. Other things being equal, the desk which is least liable to rattle or lead to dropping of books is to be preferred, for the best of pupils will encourage furniture to be noisy. Certain otherwise excellent desks have proved unsatisfactory because they required keys, locks, or bolts of such a nature that it was possible to lose them, and of course they were lost.

In addition to being single, adjustable, steady, and convenient, it is claimed with many good reasons that desks and seats should be movable. The conventional arrangement of straight rows may then be used at will or it may give way to a "circle" or any other form for which diversity of school

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exercises calls, even making the formation of several " conversation " or " work " groups a comparatively easy matter; if special programs, school parties, or community social events require much clear floor space, all furniture may be crowded to one side of the room or disposed of in cloakroom or corridor. Care should be exercised in adopting movable furniture that the requisite steadiness is not sacrificed. Related to what was said concerning the shape of the schoolroom it should be evident that the conventional arrangement by which the rows of seats run lengthwise of the room is the proper one if furniture is to be fastened to the floor.

Ventilation of the schoolroom. Proper ventilation is an essential of good school work. Impurities from clothing, organic matter from the breath, crayon dust, occasionally gas from stoves, in addition to changes in the air due to rebreathing, make frequent change of schoolroom air necessary. Both pupils and teacher are likely to be unconscious of the vitiated atmosphere, but a person entering the room detects very readily the need of change; the teacher who occasionally steps from an unsystematically ventilated classroom, in order to reënter a minute or two later, may thus wisely apply a crude test to schoolroom air. It is difficult to give any practicable measure of the amount of fresh air required; recent studies indicate that dead or motionless air is more injurious than the same air when fanned or kept in movement. Pupils vitiate from two thousand to three thousand cubic feet of air apiece per hour, though of course no child actually breathes this quantity. Measured in another way, a schoolroom of average size, adapted to the needs of thirty pupils, should have practically complete change of air every ten minutes. Such measurements give the teacher only a very general concep-

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tion of the amount of air change desirable; it would seem, however, that if any error is made regarding measurement of ventilation, it should be upon the side of an excess of fresh air.

In buildings ventilated by a fan system the teacher must be constantly alert to know that all is working as it is supposed to; if the atmosphere of a schoolroom is stagnant, polluted, or impure, the effect is the same whether the system is scientific, the result of architectural afterthought, or lacking entirely. Hiding behind " Our building has a good ventilating system " is often like the practice of the community which abolishes an evil by law, remaining hence complacently blind to its continued presence.

In rooms dependent upon windows for ventilation it is the teacher's business to see that change of air is effective without direct drafts upon seated pupils. By noting the direction of the wind, remembering that warm air escapes rapidly through openings at the top of windows, that several windows slightly opened are better than one more widely open, and keeping the thermometer in view, a safe supply of fresh air may be constantly present. Not infrequently teachers could make better use of intermissions and rest periods to change schoolroom air, but a simple calculation of the amount vitiated by each pupil will suffice to show the inadequacy of such means alone used at hourly intervals. In this connection it should be remembered that a well-ventilated cold room in winter is more dangerous than one at the proper temperature even though the air may need moving. As country and village schoolrooms are often very slow in becoming warm enough on cold winter mornings, it is not wise to insist very rigidly upon ventilation until the air of the entire room has been thoroughly warmed.

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Combined heating and ventilating systems operate effectively in weather cold enough to require strong fires; in warm weather with low fires their effect upon ventilation is very slight. Both in installing such systems and in their operation it is important to remember the principle upon which they work — "heated air expands and rises, cooled air contracts and sinks."

Maintaining proper temperature. Maintaining the proper temperature in a schoolroom is inseparably connected with health, discipline, and instruction. In large buildings the teacher's direct responsibility usually ends with his being alert to see that the thermometer registers the proper temperature — sixty-eight to seventy degrees in most parts of this country. In the one-room school or in any room heated by a stove, more vigilance is needed and in thousands of cases direct control of the stove falls upon the teacher; it then becomes part of the teacher's business to see that pupils do not suffer with heat or with cold. If the room is unevenly heated, pupils should be shifted to make the best of a bad condition. Merely allowing them to move nearer the source of heat or away from a scorching stove is not always enough; it is very often the teacher's obligation to remind bashful little children that they are not comfortable. In meeting this responsibility it is well to note that pupils who are warmly clad, well-nourished children, and those who carry a good supply of adipose tissue are least liable to suffer from the cold. Because of the last reason given girls are often less sensitive to cold than boys.

Humidifying schoolroom air. If warmed schoolroom air is too dry, as it is sure to be unless provision is made for humidifying it, the teacher can materially improve its condition by

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keeping an uncovered vessel of water in the room — upon the stove or near the source of heat. The neglect of this precaution doubtless is the cause of many colds and ultimately of serious nose and throat trouble. Conservation of fuel, so essential during recent winters, is also greatly facilitated by maintaining the proper degree of humidity.

B. Teaching Equipment

Teachers are frequently responsible for judicious purchase of teaching apparatus and always for its liberal and effective use. Both of these phases are considered in what follows, though some of the more specific teaching uses are deferred to a later chapter. No attempt is made to include a complete category of apparatus in the discussion; those considered are the more important, generally used, or typical, and much of what is said applies to minor or special teaching appliances.

The blackboard. The blackboard, the best material for which is slate or glass, should be liberal in extent. In rooms used by smaller children its lower margin should not be more than twenty-six inches above the floor, increasing to thirty-six in the upper grades. A board approximately four feet wide satisfies usual requirements: in some rooms an additional panel, twelve to sixteen inches wide, proves useful for somewhat permanent decorations or material which is to be used often. This "upper blackboard" not only lessens demand for space upon the blackboard proper, but if protected by a narrow molding from an occasional high sweep of the eraser, may be used to emphasize neat artistic ideals in lettering and design. Blackboards should not be placed upon a narrow strip of wall between two windows; if so located the

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business of the teacher is to see that they do not become the cause of eyestrain.

Crayon dust is an evil associated with extensive use of the blackboard. To remedy this:

(*a*) So-called "dustless crayon" may be used, it being understood that no crayon which makes a mark is really dustless.

(*b*) Erasers should be dusted every day by the janitor.

(*c*) The trough at the base of the board should be cleaned daily; the principal cause of flying dust is the fact that erasers when not in use are laid flat in this dusty ledge. An excellent device seldom used is to have in at least part of the trough a wire netting frame which constitutes an "upper bottom." Erasers being placed upon this lose a portion of their load of dust instead of accumulating more.

(*d*) The board should be washed frequently; the little blackboards in many European schools, used principally by teachers, are kept free from dust by a damp sponge which serves as an eraser.

(*e*) Pupils may be taught to erase carefully, especially not to swing dust-laden erasers away from the board or by sudden jarring to unload dust in the room.

The value of individual blackboard work by pupils is too great to give up because of the dust evil which may be greatly lessened by some or all of the means suggested. The teacher who fears to have the blackboard used because of the dust is as wasteful of opportunity as the one who refuses to use it because his power of blackboard illustration is slight.

The teacher who can draw skillfully has a great advantage over one who must depend exclusively upon the voice, but all can make the blackboard their ally through lines, diagrams,

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figures, emphasized syllables, or words, and improvement comes with practice. The increased attention of pupils to even the crudest graphic attempts by an instructor is an incentive to better work. How many teachers have soliloquized: "How expectantly these pupils are watching me! And now I am about to disappoint them by not being able to make the crayon tell them anything."

Maps, for which a skilled teacher can often make the blackboard a partial substitute, are indispensable aids in several subjects. Though school boards do not always supply these liberally, teachers frequently fail to make full use of what is provided. Being themselves thoroughly familiar with place relations involved, they forget that perhaps two thirds of the class need the help of a map. A county superintendent, after watching the teaching of a history class for some time, took charge. Wishing to use the excellent map, safely rolled in its case, he endeavored to place it before the interested group. A cloud of dust shattered from the case upon his coat. While he brushed, the teacher explained that the key to the case was at his boarding place; no use of maps had seemed necessary in half a year of school. A high school teacher excused herself to an inspector for failure to use a map on the ground that she was temporarily using another teacher's room, though an easily made blackboard sketch was the only map needed. An eighth grade teacher with keen eye for infractions of discipline saw a boy endeavoring to consult a page map in his history: "Shut your book, you must not look at a map *during* the lesson," she shouted. Now this teacher was doubly wrong; a good time to use a map *is* during recitation, and she should have used the high-priced map or history chart, both of which were available but unused. Such teachers as these

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have something to do with the unwillingness of school authorities to spend money for maps. Why invest in useless or unused apparatus?

Much is learned by pupils casually from a map which hangs constantly before them. Such maps have the merit of being always ready for use, but they are often impracticable because of lack of wall space and because they prove an unsightly element in a schoolroom's furnishings. The most convenient and serviceable maps for the majority of schools are the series rolled in a movable case. A superior teaching device is the outline map in yellow or white upon a dark background, the blackboard outline map, which makes it possible to present only such phases as are being studied. In addition to the bewildering confusion of details upon most wall maps, it is often difficult to give pupils the idea of history which might be gained by study of a contemporary map. The outline map makes it an easy matter to isolate any one of a dozen geographical phases for special study, and by skillful use it may become a contemporary map.

The dictionary. Use of the dictionary should be a lifelong habit; this it is most likely to become if pupils are taught to use it economically and effectively. Without instruction some learn, some become disgusted, and others form cumbersome habits which waste the time it is the business of the teacher to save. Ideally every pupil should have his own dictionary; where the school furnishes books, dictionaries should be part of the equipment. The following suggestions are offered as an aid to teaching the use of the dictionary.

1. Pupils must know the alphabet well enough to use it readily.
2. Give practice in arranging lists of names or articles alphabetically.

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3. Give similar practice in arranging lists of words in "dictionary" order, considering alphabetical sequence of letters after the first.

4. With a dictionary, show that M is in the middle, D halfway between the beginning and M, and S halfway between M and the end. Practice finding other letters readily.

5. Write several pairs of "catchwords" which appear at the top of a dictionary's pages; have lists of words beginning with the same letter classified by pupils as falling before, between, or after the "catchwords." Suppose for example that *felis* and *fem* are one of these pairs; pronounce a series of words like *fell*, *feline*, *felt*, *felicity*, and *fend*, and have them listed as occurring before, upon, or after the page included by the catchwords.

6. Give lists of five or ten words for rapid finding by means of "catchwords." In this practice exercise pupils merely record the number of the page when the word is found.

7. In the upper grades show how much may be learned about a word in addition to its spelling, pronunciation, and definition.

8. Since selection of the appropriate definition is often as difficult as finding the word, pupils should be given specific practice in selecting the needed definition. Such exercises should at least result in convincing the pupil of the necessity of careful selection.

9. A few lessons of exploration in the introduction and appendix are worth while. Unsettled points often remain unanswered because it does not occur to the pupil or teacher to make use of available resources.

If pupils do not have individual dictionaries, the principle of use should determine the expenditure of money. A half dozen dictionaries at two dollars each will result in more service day by day and will last longer than an equal or greater sum invested in a single volume. The ideal equipment for elementary and grammar grade rooms would per-

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haps include individual dictionaries and a complete or unabridged edition as a court of last appeal.

Encyclopedias. Encyclopedias are a legitimate part of the school equipment, but they should hardly be acquired by spending all available money, or before the school is well supplied with other library material. When purchasing is done, it should be by school officers if pupils are to use them; many teachers are furnishing schools with expensive sets of such books which should have been paid for by those whose children are wearing them out. Before selecting an encyclopedia it should be ascertained that it is accurate, reasonably recent both in copyright and actual content, and expressed in language which may be comprehended by those for whom it is designed. Some of the works offered for sale by agents at summer schools and teachers' institutes fail in most of these respects, notwithstanding too thoughtlessly given testimonials by "influential schoolmen."

School library. It is reasonable to expect teachers to know books well enough to select the school or schoolroom library with intelligence. Observation shows that certain tendencies seem to interfere with the teacher's best judgment in the selection of books. The first of these is to choose in the direction of his own major interests. One with strong historical or scientific bent must guard against overemphasis of what seems most important; the teacher's interest may be unusual and is sure not to be shared in a great degree by many pupils. A second error of judgment is to select books in sets. These look well on shelves, and the fact that a volume is part of a set does not condemn it, but many sets are not of uniform excellence, and buying a large set is likely to oversupply a single type of material, at the same time exhausting avail-

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able funds before all interests receive attention. Not a few town and village school libraries have suffered from this "set disease." A third error, shown most conspicuously in ungraded schools, is failure to meet the intellectual level of younger pupils. Little children are most numerous and least able to read general material found at home. Older pupils usually read with profit and pleasure what is adapted to needs of earlier grades, while material selected for the upper grades seldom has accessible value for primary classes.

It has been assumed that teachers or professional school officers are to select books. A great deal of money has been wasted by well-meaning laymen in purchasing excellent books which school children cannot appreciate. It is the business of the teacher not only to know the literary needs of pupils but also to inspire and direct them in the use of the library. Homes without books and multitudes of adults who never visit the community library are the grown-up consequences of school children who never learned to use other than text-books in school.

The teacher as guide in purchasing teaching equipment. It has been stated that teachers are often depended upon to guide in the purchase of equipment. In the exercise of this trust it is necessary to seek competent advice. It is not to be expected that the teacher will know offhand the price of books or apparatus, but he should possess or be able to secure information that will avoid mistakes and waste of money. Catalogs and price lists of standard publishers and school supply houses are always to be obtained from addresses found in the advertising columns of school journals; many states issue official lists of great value; and it is one of the functions of

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the county superintendent to advise rural teachers upon such matters.

The ideal of "get the best" occasionally leads to waste, though the best is never too good. What is best for the scholar or the school enrolling hundreds of pupils may not be appropriate for the children of the elementary school, or may be impractically expensive. The one-room rural school which spent for a globe eighty-five dollars of its money raised by an entertainment, equipped itself with a piece of apparatus which none of its teachers could understand and which, aside from its magnificence, was no more impressive to pupils than one costing a fortieth as much would have been. The rural school board which paid an agent forty-four dollars for a reading chart in color probably furnished him a handsome profit.

The opposite extreme of paying as little as possible for books is often met. Nothing is gained, however, in purchasing cheap and out-of-date reprints of standard works or furnishing a school with any kind of equipment merely because the price is low. Poorly bound or paper-covered books sometimes find their way into libraries because of a few cents' difference in price; since no one *can* be careful of an unbound book, the wisdom of such economy may be questioned, and the general influence of a shelf full of dilapidated or dog-eared volumes is not wholesome.

Schoolroom decoration. Though not usually considered part of the teaching equipment, schoolroom decoration exerts such important influences upon the characters the school is forming that it is incumbent upon every teacher to know and appreciate the marks of approved esthetic taste. The influence of a correct and harmonious environment no one is

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likely to deny theoretically, though practically it sometimes seems to command little notice. It has not been proved that children learn more arithmetic or history *because* they study in a beautiful schoolroom, but it is probable that children who study in well-decorated rooms *do* learn more, owing to the fact that a community which cares how its schoolrooms look will probably send better children to school than the community which is indifferent. But apart from learning, which is only one activity of the school, pupils grow by what they appreciate; it is a hard saying that " We become a part of all we experience," even harder if it runs " All we experience becomes part of us," but the thoughtful teacher will not quarrel with the implications of either statement. Good taste is not developed by inartistic environment.

Artistic taste in schoolroom decoration means appropriateness. It is as unreasonable to turn a school into an art gallery as to leave its walls bare; " too little rather than too much " is a safe rule to follow. There is no place for the tawdry, coarse, flimsy, or gaudy; when voluntary contributions to the decorative scheme are depended upon it requires tact to manage donations from homes in which low artistic standards prevail; without giving offense, an unsuitable piece should not be allowed to mar entire effects, and occasion must be used to improve taste. In the selection of pictures, which form so large an element in mural decoration, age and interests of pupils are to be considered. In a room enrolling all ages care should be exercised to secure a generous share of pictures adapted to the needs of younger pupils; those who are more mature will find value in these, but, like " grown-up books," adult subjects in pictures make small appeal to little children. The smallest details of framing, hanging, and

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arrangement are not insignificant; the best and most expensive pictures lose effectiveness if placed in austerely straight rows, given unsuitable setting, hung in wrong relation to each other or in a poor light.

C. Daily Schedule and Its Administration

The daily program or schedule of class exercises must be worked out with the teaching situation fully in mind. This is a relatively simple matter in the graded school where the two-class plan has been generally followed. It is slightly more complicated if departmentalized teaching is adopted, but the most serious problem is encountered in the one-room rural school enrolling all grades. No attempt to formulate specific schedules is made, but certain important considerations usually involved are noted. The length of the school day, school term, intermissions, and subjects to be taught are usually fixed by law or by custom, from which it is not wise to depart without good reason.

It seems probable that the school day could very profitably begin earlier and last longer than is now the custom in many of our schools, and there are excellent arguments for lengthening the term considerably; these are questions in which the teacher has an interest, to be sure, but only indirect participation in settling. Every teacher, however, in administering a program within such limitations as are imposed, has freedom of attitude which is easily extended to actual performance. It is with these adjustable or modifiable contacts of the teacher with the program that this discussion is concerned.

Follow the program unless modified according to a plan. In general the teacher should hold strictly to the schedule.

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Falling behind is a dangerous policy; getting ahead is almost unheard of except among beginners who have not learned to organize subject matter so that they may have something to teach. Both of these errors mean the slighting of some subject — unfortunately likely to be the one for which the teacher cares least — and so exposes to continued neglect. There is but one safe rule — "stick to the program." Until one becomes familiar with units of subject matter to be taught this will sometimes seem to result in teaching out a given amount of time rather than presenting a unit or phase of a subject, but as skill develops, the conflict is less marked; no teacher ever reaches the point where he can invariably make a lesson plan exactly suit a limited class period, but there need be little loss in bringing a lesson to a close when its allotted time has passed.

What has been said applies to unpremeditated departures from schedule; it is quite commendable to vary the order of exercises or length of class period when there is good reason for so doing. As an illustration: a teacher, knowing that the work of the "A" class for the next day involves presentation of a new topic requiring, for economical and effective instruction, a long class period, might deliberately modify the "B" class assignment so as to require less time spent in class exercise.

The nature and importance of subjects. The nature and importance of subjects should have a share in determining their place on the program. In the lower grades reading occupies by far the most prominent place. If an entire class seems low in attainment in a given subject, that branch may properly receive added recognition on the daily schedule until the deficiency is removed. Subjects which are adapted to certain seasons occasionally require added time for a series of lessons; thus the growth of young plants is more practically

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studied in spring than in autumn. Subjects which provide occasion for field trips or excursions require program adjustments, and a live teacher is never so set in routine that he cannot modify the schedule to make use of an unexpected opportunity to give vivid application to some useful lesson. Too many formal or drill subjects should not be placed in direct sequence; in fact these may wisely be interspersed at intervals during the entire day. Classes which require collecting of material or extended blackboard preparation should preferably be placed next to an intermission or recess.

The size and character of a class. The size and character of a class are important considerations in its time allotment and placing upon the daily schedule. The presence in a class of a group of over-age boys attending their last school term might constitute a reason for modifying the program to provide for some local life need of these pupils. It might happen, for example, that these boys had suddenly realized that they were unable to write a conventional and businesslike letter; who would object to recognizing their need by giving them additional time? If a teacher wishes to avoid waste of time due to infraction of discipline, he will probably see to it that the program provides unescapable work for the large, idle, mischievous, or noisy class during the periods preceding dismissal rather than for the small, docile, quiet, or industrious group. And while a class of twenty does not require twice as much time for recitation as one of ten, it usually does require, and is entitled to, more time than the smaller group.

The question of fatigue. The question of fatigue is involved in constructing a daily schedule, but, though many studies have been made, conclusions are not unanimous. There is in popular thought and among teachers much con-

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fusion between fatigue and lack of interest. As stated by Thorndike, the pupil who seems to be affected by fatigue is less willing rather than less able, and one is wearied by what does not happen quite as much as by what does. A pupil who is apathetic toward a subject would not really find it fatiguing if he followed his inclination and put forth no effort or dozed in class; on the other hand, if he were conscientious or possessed of the notion that he must learn what was given him, and forced himself to attend to the subject, it would probably be more fatiguing than another to which he gave spontaneous and unforced attention.

Aside from the attitude and individual ability of the pupil, there is in class instruction the manner and interest of the teacher. An educational measurement of great value would be the fatiguing power of each teacher. It may thus be seen that fatigue can hardly be considered inherent in any subject, but may rather be thought of as an accompaniment of entire teaching situations, of which there are many factors: poor health, bad air, or overtense teaching showing themselves as immediate causes and poor heredity or an ill-adapted curriculum as more remote. There is doubtless a well-defined "work curve" for most pupils, reaching its highest point about the middle of the first quarter of the usual daily session, and its lowest late in the afternoon. Each intermission has a reviving effect upon pupils, except the few who play too strenuously. The fact that many pupils eat a hearty midday meal has more effect upon the work of the session which follows than the element of fatigue itself. Assuming that the school day is divided into four approximately equal sessions, it is fairly safe to assert that the best period for work is the first, followed in order by the second or third, with the fourth

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unquestionably last. Subjects regarded as of greatest importance should be given the preferred place.

The length of a class period bears a direct relation to fatigue, since well-conducted class work requires considerable expenditure of energy from pupils. Some of the symptoms of too prolonged effort are wavering attention, inaccuracy, decreased memory ability, yawning, restlessness, and irritability, though it is true that an overheated or stuffy room and other external conditions bring about the same results. Approved experience indicates the following as approximately the proper time to continue class exercises for children of various ages:

Age five	to seven . . .	15 minutes
Age seven	to ten	20 minutes
Age ten	to twelve . . .	25 minutes
Age twelve	to fifteen . . .	30 minutes

Shorter periods represent waste because of too many changes; longer periods mean loss due to fatigue. Last, but very important, the teacher should strive to decrease occasion for fatigue by reducing unnecessary stress and friction, by keeping the schoolroom physically and temperamentally comfortable, and by encouraging children during intermissions to forget school work in whole-hearted play. Only with the occasional pupil is the last a difficult matter.

The expedient of alternation. The expedient of alternation makes it possible to teach the large number of subjects now in the elementary curriculum. It is not necessary for all classes to recite every day, as prevailing European practice amply demonstrates. It is manifestly better for an eighth grade class to work thirty minutes on alternate days than to be in

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session fifteen minutes daily. Of course fundamental subjects of the lower grades cannot so well be alternated.

Saving time by combining classes. Further economy of time may result from combining classes in certain subjects. A form of this is the system of alternation practiced in many rural schools by which the work of the four upper elementary grades may be done with a two-class organization. The upper or "A" class section does seventh grade work one year, eighth the next, and seventh the year following, always containing some pupils who are doing a second year and others a first year of work in the class. Similarly the fifth and sixth grades are alternated. Below the fifth grade the plan operates much less successfully. Another practical economy is to unite writing and drawing classes of several grades or a room; the same plan operates well with music and physical training. Judicious management makes it possible to combine two spelling classes during one short period for written work, the teacher pronouncing words alternately to each group.

Provision for helping individual pupils. An important consideration in making a daily schedule is the provision made for securing a degree of attention to individual pupils' needs. The oft lamented disadvantages of the graded system may be obviated, at least in part, by making allowance for one or more study periods during which the teacher is free to bestow help wherever needed. This is the essential feature of the Batavia system, in which the classroom teacher is assisted by another instructor who devotes full time to giving individual help. It is well to remember that there is little economy in giving to a slow pupil or one who has fallen behind because of absence an undue share of the time of

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a regular class for explanation of points which are thoroughly comprehended by all the rest of the group; it is equally wasteful and unjust to drag a potentially competent pupil over lessons which are so far from being understood as to remain mystifying stumbling-blocks in the way of future progress when a little well-directed individual instruction would clear the situation.

In rural schools the skillful teacher is the one who always finds time to give individual help between class recitations, and though it may be impracticable to provide regular individual help study periods, the use of alternation should make it possible to provide these when necessary. A teacher who lifts his vision far enough above daily routine to take account of ultimate economy will often effectually silence the very natural "I have not time" which springs to his lips when a new plan is suggested.

Opening or general exercises. The last consideration is that of opening or general exercises, which by virtue of their nature are best conducted for the entire classroom. No program is complete which does not make provision for this form of activity; no classroom teacher has risen fully to his responsibilities until he has solved the sometimes vexed problem of what the school should do, have, or enjoy at this period. Two principal reasons may be given for the comparatively frequent absence or unsatisfactory quality of this part of the day's work; the teacher either can think of nothing to do, or he feels that there is not time. Clearly the two excuses are related — there is always time for what is worth while. The teacher who starts with a few devices remembered from his own school days, picks up a few more from school journals or other teachers, and then allows the exercises to lapse be-

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cause he has run out of plans is probably right in saying "There is not time." But if such exercises are made to realize their fullest possibilities, they are of so much value that a competent judge of the daily work would no more think of doing without this feature of the program than of abolishing the class in reading or geography. If these subjects are not well handled they also take too much time and could with little loss be omitted.

What are the values to be realized in opening exercises? First, from the immediately practical viewpoint, they are an incentive for punctuality if they are "too good to miss"; they afford occasion for making general announcements of moment to all, and give opportunity for children out of breath with vigorous playing to cool off or "settle down."

Second, subjects which have not been able to find a place upon the program, though far too important to be ignored, may at this period receive considerable emphasis. In this category may usually be listed moral and religious instruction, and lessons in etiquette.

Third, it is possible to bring before the entire school current civic and social questions at the psychological moment. This is often a more effective plan than to do violence to regularly outlined subjects in order to utilize a passing interest of undoubted but unrelated value. Much of what pupils learn is "picked up" in this incidental fashion; it is the method of the market place and the casual meeting of those having common interests — a method which the teacher who makes organization a fetish is likely to undervalue.

Fourth, the inspiration of a good start is not to be lightly esteemed. If the opening exercises leave the pupil with an undefined but delightful feeling that he has been in the presence

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of something great, or a tingling sense of the reality of some mighty interest or power, the lifting force which took him for a few minutes out of his little workday world is not spent in a moment. Such values must forever remain intangible and unmeasured but no teacher who knows boys and girls can doubt their effectiveness in developing ideals.

If the foregoing values are to grow from opening exercises they must possess the two important qualities of being good and interesting. The first of these requirements would exclude all that is not high class; it is foolish to sing a cheap song or read a poor story while the world is full of great songs and wonderful stories waiting to be discovered and used. It is right to entertain and amuse children but the most entertaining and the funniest may be of the best. The second requisite, being interesting, sometimes excludes material good enough in its place but inappropriate for this purpose. The teacher who says, "The visitor to my school made a good talk but the children did not listen well," is politely stating a half truth; if the children did not listen the talk was not a good one — for that room, however fine it might have been elsewhere. The test of the talk is its effect where it *is* rather than where it *is not* delivered. To be interesting an exercise must be adapted to the age, capacities, or needs of the room; it should be executed in an appropriate way with no hitches, breakdowns, or unplanned delays, and there is an increased probability of success if an element of uncertainty or newness is present. The last-named quality suggests the imperative need of great variety. Now it should be evident that exercises which are to meet the requirements set forth must be carefully planned and studied, perhaps even more cautiously than other phases of school work. And of

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every proposed exercise the questions must be asked, "Is this good — the best that I can find? Will the pupils care for it?"

The beginning teacher finds it difficult to secure variety in opening exercises. Failing to discover new forms, those which are known are overworked with inevitable loss of interest. One young teacher adopted the plan of listing in a notebook such activities as seemed adapted to the purposes of opening exercises. The list was better for her than the ones she could find in manuals or teachers' periodicals, though she borrowed from both, because each item had personal and specific meanings. She found after a year or two of experience that her list was more than sufficient to meet ordinary needs for the entire year, and that she always had convenient access to the results of her own and others' experience upon which to draw for variety. As the plan may prove helpful to others a model page of her book is quoted. Since this teacher's work included pupils of all ages, her list is not adapted exclusively to the capacities of any particular grade or class.

1. *Singing.* Have individual pupils or "committees" select the song program for certain days or a week — sing old songs much of the time — unless books are abundant, have songs copied on the board or in a notebook — memorize one or two national songs — use best singers occasionally upon solo parts.

2. *Memory gems* — not too often.

3. *Riddles, conundrums, question box* — not hard to overwork.

4. *Interesting* or *peculiar number arrangement* like magic squares.

5. *Good stories* (Names of books and stories found satisfactory).

6. *Devotional exercises* — unless some one in the community seriously objects.

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7. *Talks* — occasionally invite some one in the community or a visitor to talk a few minutes. Don't unless you are sure he will say something and leave off when he is done. Many adults cannot talk to children; if a visitor duly invited continues too long, it is an awkward matter to get him stopped; yet it is not much wiser to overstep the allotted time for opening exercises than for any other part of the daily program.

8. *Current events.* To secure responsibility limit the field by dividing the room into groups; *e.g.*, Group A, look after European news; Group B, news of the United States, outside of our own state; Group C, our own state, including the legislature.

Similarly groups may be made responsible for scientific, literary, biographical, and political news. Spend a few periods telling how to use papers and magazines — how to find what is most worth while.

9. *An observation tray.* Having ten miscellaneous objects on the tray, let pupils look at it half a minute. Then let each give the names of all he saw or remembers. Some will name things not on the tray. Why?

And so on through many pages this teacher was capitalizing her experiences.

D. Teacher's Responsibility for Hygienic and Sanitary Measures

To some extent consideration of hygienic and sanitary measures is inseparable from the discussion of housing and equipment; certain phases of these subjects have been touched upon in an earlier section of this chapter. But even an ideally situated school, properly housed and superbly equipped, leaves much of the care of pupils to the vigilance of teachers, and few school plants are ideal. It is not the

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function of the teacher to prescribe as does the physician or oculist, but he is responsible for preserving hygienic conditions, preventing immediate injury to children's health while in school, and for building habits and ideals which will result in permanent physical and mental economy; and by virtue of the relationship in which the teacher stands it becomes his duty to notify fathers and mothers of defects or suspected ailments of their children and to suggest possible sources of remedy or the proper kind of professional service to seek.

Eyesight. The modern school submits the pupil's eyesight to vigorous use, and except when conditions are ideal, to numerous dangers. In order to stand the strain in school and form habits which will conserve eyesight after school days are over, pupils should be trained to avoid unnecessary use of hard lead-pencils or those which leave a dim or glazed mark; not to write with unduly diluted ink; to avoid writing upon paper which reflects light too directly, or because of its coarseness makes writing in clean outline impossible; not to read by a dim light, with light shining directly upon the page, nor to read or write while in such position that a line connecting the eyes would not be parallel to the lines upon the page. Such training must be effectively done if it is to be carried over into home study in which conditions generally are likely to be worse than at school. Only the teacher's direct relation to use of unsuitable materials has been mentioned; of course the teacher's influence should be vigilantly and positively exercised against the adoption of badly printed textbooks or those printed upon highly glazed paper, and against purchase of any supplies not the best for eyesight. For the pupil with an abnormality of vision the teacher is peculiarly responsible. The nearsighted child needs to be

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seated with reference to his defect. While the teacher may not be expected to give an expert examination or fit glasses, it is distinctly his duty to discover defects by such simple tests as that of the Snellen card and to suggest to the parent that the services of an oculist seem to be necessary.

Hearing. The pupil who has defective hearing must first of all be discovered, if possible before the defect becomes conspicuous enough to render its detection an easy matter. The presence of adenoids, earache, or running ears should be viewed with suspicion as symptoms which often accompany slight deafness. Two simple tests may be used by any teacher and these should be administered to every pupil whether or not deafness is suspected.

The watch-tick test consists of ascertaining the distance at which the pupil can hear the tick of a watch. Since watches vary, no uniform distance for normal hearing can be given. The teacher may use his own hearing distance as a measure if it is known to be normal, or the median or average distance of half a dozen seemingly normal pupils. The ear which is not being tested should be closed, and care must be exercised that the pupil does not depend upon imagination. The imagination difficulty may be checked by use of a stop watch or by recording a few alleged hearing distances when no watch is used. Deaf pupils are often sensitive and endeavor by every means to appear normal.

The "whisper test," in general less accurate, is also a check upon overuse of imagination. It consists of whispering directions to a pupil at a distance. If the normal or average pupil complies with directions at the distance of twenty feet, whereas another can barely understand at a distance of ten or five feet, there is good reason to suspect partial deafness.

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In order to prevent lip-reading, care must be taken to hide the lips of the one who whispers. The inaccuracy of this test is due to the impossibility of regulating the loudness or clearness of the whispered direction or making sure that all directions used are equally easy to comprehend. " Sit down " is phonetically easier to understand and somewhat more probable as a command than " Move left." The teacher's diagnosis of deafness extends no further than discovery of the defect, though the parent should be informed. The deaf pupil in school must be given a preferred seat and in other ways protected against loss or disadvantage due to failure to hear.

Adenoid growths. The presence of adenoids is another condition which often interferes with the pupil's ability to do school work, renders him unusually susceptible to germ diseases, and sometimes results in permanently defective breathing, voice, or hearing. If the pupil habitually breathes through the mouth, adenoids are indicated; if he snores, it may be adenoids or a cold; if his tone is peculiarly nasal in pronouncing such expressions as " nine, ninety-nine, nine-hundred-ninety-nine," adenoids may be the cause of the peculiar twang. In many cases the operation which has removed the adenoid growth has caused the foregoing symptoms to disappear and has resulted in a new attitude toward school work and life. The trouble often exists entirely unsuspected by parents, who should be notified by teachers in case the disease is indicated.

Posture. The posture of a few pupils always needs close watching. The rapidly growing child whose mother is too busy to notice that her boy is becoming stooped must be kept straight. The pupil who " writes with her nose " needs to

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be shown that it is possible to write while sitting upright. As has been stated, many unhygienic positions are due to improper school furniture, but quite as many awkward, gawky, impolite, sprawling, or ungainly postures, both in sitting and standing, are due to other causes and occur in schools equipped according to most approved standards. The pupil's need of something to lean against while standing seems quite extraordinary, as does the necessity for shuffling as he walks, or keeping his feet in the aisle. All such lapses it is the teacher's business to combat, whether they be classed as breaches of etiquette or unhygienic postures likely to lead to permanent imperfection or deformity.

Communicable diseases and sanitary precautions. The prevention of communicable diseases among pupils rests to a large extent with the teacher. Little expert knowledge of these is expected, but alertness to detect a few well-marked symptoms and eternal vigilance in preventing known means of contagion may reasonably be demanded of every one in charge of a schoolroom. Fever, a peculiar cough, and every kind of skin eruption should be the objects of intelligent solicitude at all times as well as during an epidemic, and the law makes it possible, directly or indirectly, to segregate "suspects" by sending them home, a function which the teacher should not be too slow in exercising. Provision of pure drinking water, the use and care of individual drinking cups, and instruction and practice in care of the teeth are within the province of the teacher's responsibility. Disinfection or destruction of textbooks used by pupils having a contagious disease is often essential. This is a comparatively simple problem when books are provided by the school, but one which requires tact if they are owned by the pupil. The sanitation

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of toilets and outhouses, even with thoroughly excellent equipment and janitor service, still requires attention. And sweeping, which is largely for the purpose of preserving sanitary conditions, is often the immediate cause of contagion by its circulation of germs which might otherwise have remained quiescent. Floors should, if possible, be oiled so that dust may be economically collected by means of a damp cloth. No janitor ought to be allowed to raise a cloud of dust until all pupils have left the room or building, and there should be no sweeping for at least an hour preceding the opening of any school session. Dust particles settling upon furniture can be removed more safely by means of the damp cloth than by the antiquated process of "dusting." The sweeping compounds which are so generally employed in city schools are not widely used by rural teachers who must do their own sweeping or perform the sometimes more difficult task of securing service from an incapable janitor. It is often possible for such teachers to prepare a satisfactory sweeping mixture at nominal cost from sawdust dampened or mixed with oil. The rough floors of many old schoolhouses would not be injured by the use of snow, which is available during many months in parts of the country. Liberally used in a cool room it effectively prevents flying dust in sweeping.

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Exercises

1. Make a list of shade trees suitable for school grounds with the advantageous characteristics of each. Consider rate of growth, beauty, early and late leafing, immunity from insect pests, hardiness, and length of life. Describe in detail the proper way to set out a tree.

2. A schoolroom is twenty-eight feet long and twenty-four feet wide. It is lighted by six windows. How large must the glass surface of each window be to insure adequate lighting? Measure a schoolroom in which you work to determine whether sufficient light has been provided.

3. Without notifying your pupils, count at intervals of twenty or thirty minutes during one day the number who are sitting in good position and compute the average. What per cent of the improper postures are due to unsuitable school furniture?

4. From the current numbers of several school journals clip out the illustrated advertisements of school seats and desks. What are the merits and defects of each type when compared with those in your room or those with which you are most familiar?

5. How long would it require twenty pupils to vitiate the air of an unventilated schoolroom with dimensions of thirty by twenty by thirteen feet?

6. If air space alone is considered, how many pupils should be seated in a schoolroom twenty-eight by twenty-four by thirteen feet? Considering only floor space, how many should it accommodate?

7. In a schoolroom ventilated by means of a system study the course of pure and foul air currents; make a diagram showing the principal intakes and outlets.

8. With a thermometer measure the temperature at the floor level of all parts of your schoolroom; record similar measurement a foot above the desk level, and at the average height of standing

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pupils. Make several such measurements during a cold day and record the results. Account for all significant variations. Which should be eliminated? What does "keeping the temperature of the schoolroom about 70° Fahrenheit" mean?

9. What are the merits and defects of the following provisions of various state laws relating to the externals of the school?

(*a*) "Whenever, from any cause, the temperature of a schoolroom falls to 60° Fahrenheit or below, without the immediate prospect of the proper temperature, namely, not less than 70° Fahrenheit, being attained, the teacher shall dismiss the school until the fault is corrected." (Indiana School Law.)

(*b*) . . . "water buckets and tin drinking cups shall be unlawful and are forbidden." (Indiana School Law.)

(*c*) "Seats, chairs, and desks placed in class, recitation, study, and high school rooms seating more than 15 persons shall be securely fastened to the floor. Desks and chairs used by the teachers may be portable." (School Law of Ohio, 1911, Title 3, Section 10.)

10. Disregarding completely the item of expense work out a suitable scheme of schoolroom decoration for one of the following: (*a*) primary room, (*b*) fifth-grade room, (*c*) eighth-grade room, (*d*) rural school enrolling all grades.

11. Enumerate additional points in the economy or etiquette of the blackboard:

(*a*) The teacher should use the front rather than any other blackboard in all explanation which concerns an entire class.

(*b*) Every one, including the teacher, should erase his own work.

(*c*) Unless blackboard space is very extensive it is too valuable to be taken up with such permanent material as the daily program.

12. Describe the map equipment you would select for your room or school if

(*a*) you could buy but two good maps,

(*b*) you could buy five,

(*c*) you were not limited in expenditure.

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If a world map or a globe were to be purchased, which should be provided first? In what subjects are wall maps needed?

13. In advising a school board concerning the purchase of library books for a country school, what points would you emphasize? List ten books suitable for each grade in your school. How may the school library be made the connecting link between school and home?

14. If you were

(*a*) a superintendent or prominent teacher, would you place your written indorsement of a high-priced set of books in the hands of an agent who is selling them to immature and inexperienced teachers?

(*b*) a teacher, would you purchase a high-priced set of books from an agent knowing no more about him or his books than what he tells you and what is contained in the testimonials which he carries?

Indicate the reasons for your answers to (*a*) and (*b*).

15. Flash cards are almost indispensable in teaching primary reading and numbers. These may be purchased, made by the teacher, or by pupils according to the teacher's directions. What are the advantages of securing them in the last way?

16. Give examples of schoolroom apparatus, purchased by a teacher with poor judgment or by well-meaning lay interference, which is not adapted to any useful teaching purpose.

17. What would be gained by having each pupil make a neat copy of the daily program, including his own study periods, and keep this individual program upon his desk?

18. In many European schools at least fifteen minutes of each hour are given to intermissions which are gradually lengthened as the school day advances. Discuss the wisdom of such pauses from what your reading or experience tells you about fatigue.

19. Is an interesting or an uninteresting subject more fatiguing to a pupil? Explain. If "*intense* subjects should alternate with

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those which are easier," how are we to determine which may properly be rated as intense subjects?

20. How would you *prove* that application and accuracy decrease if a class period is unduly prolonged?

21. Make a *daily and weekly* program for a room which includes fifth and sixth grades, allotting the following number of minutes to each subject (some classes will not recite every day).

	Fifth Grade Minutes	Sixth Grade Minutes
Reading	125	125
Language	150	150
Spelling	50	50
Arithmetic	125	125
History	—	140
Geography	120	120
Nature Study	140	—
Art	90	90
Music	60	60
Manual Training	90	90
Penmanship	75	75
Physical Education	90	90
General Exercises	20	20

22. In the interest of sanitation as well as of tidy appearance, floors and yard should be kept free from waste paper and other refuse. The problem is best solved by instilling in every pupil an honest pride in keeping his school "looking right." How may this be done most effectually?

23. Discuss the advantages and practical difficulties of each of the following substitutes for the school "public drinking cup":

(*a*) Each child own his cup.

(*b*) Teach children to fold their cups out of square sheets of paper.

(*c*) School furnish paper cups.

(*d*) Sanitary drinking fountain.

24. A part of the purpose of hygienic precautions in school is to

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accustom pupils to proper health and sanitary standards. What specific measures may be taken relative to each of the following?

Responsibility of each for the health of all.

Care of the teeth, nails, hands.

Appreciation of the importance of fresh air and proper breathing.

Readings

Bagley: *Classroom Management*, IV–V (Daily program).

Burrage and Bailey: *School Sanitation and Decoration* (Decoration), VII, VIII.

Colgrove: *The Teacher and the School*, XII, XIII (Daily program).

Dresslar: *School Hygiene*, II–XIX, XXIII–XXV.

Johnson: *Education by Plays and Games* (Playground).

Terman: *The Hygiene of the School Child*, X–XIV.

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CHAPTER V

GOVERNING AND MAINTAINING MORALE

The meaning of government and morale. School government and discipline are terms popularly used to include a host of situations in which unsocial or antisocial tendencies impede the organized activity of the school group and have to be met by measures more or less apart from the regular life of the school and consequently somewhat wasteful. This view is indicated when it is said that the teacher governs best who governs least, — a true statement if it means that pupils and teacher are working well together. It is indicated also in the tendency of the lay public to overrate power to exercise the disciplinary function, a natural attitude since the casual visitor or parent may observe or learn of improper deportment, but is unable to analyze the situation and find the real cause of the outward break which may have been ignorance or lack of instructional skill on the part of the teacher.

The writer prefers to use the term in a much wider sense, harking back to the original significance of the word as pilot or guide, and coupling with it the idea of maintaining morale, the proper mental and moral condition of zeal, spirit, zest, hope, or attitude confident of success. The teacher as governor guides, manages, controls, inspires, and keeps the group at work in orderly industry, insuring the "existence of a

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spirit of coöperation on the part of pupils with quick and intelligent sympathy of the teacher."[1] Governing and maintaining morale imply the use of all means to secure harmonious action in attaining the ends of the school.

Purposes of school government. The two great purposes of school government are (1) to insure each member of the group an opportunity to perform advantageously the work assigned, without hindrance or distraction from other pupils, and (2) to develop habits and ideals of social behavior and self-control which will function in later situations.

The school must have group and individual habits essential to its organization and activity, which no one expects to find widely applicable to other than school situations. If well conducted, it is no more a home-like than a shop-like or church-like place; it is *school*-like, entitled to its own peculiar conventional modes, not to be approved or condemned because of their use in other social institutions, but measured as to their effectiveness in realizing the *school's* purpose. Failure to concede this right to set its own standards of appropriate behavior leads to holding the formalness of average school organization up to undue scorn, and overemphasizing the force of school habits and attitudes carried into other environment. It is so easy for an educational lecturer who does not instruct children to raise a pedagogical laugh at almost anything the rank and file of conscientious teachers do. It has sometimes been suggested that because a generally accepted convention of the school disapproves helping a classmate in examination or whispering to his seatmate the forgotten answer to a question, there is danger that pupils may grow up as unsympathetic and unneighborly adults.

[1] **Bagley**: *School Discipline*, 2.

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Some have even expressed the fear that because the child is required to obey his teacher during a period of years instead of reasoning out his own course of action, he may lack power of self-guidance and as a consequence fall a victim of wrong leadership.

Without defending "transfer of training" more than modern psychology would sanction, it is doubtful whether such fears have any foundation. The child usually does and certainly should regard much of his school behavior as part of the situation — to be left with the schoolroom, or only to be revived in circumstances like those of the school. Thus the child who has learned not to "whisper" or walk about at will is likely to find these habits useful at church service or lecture; the chances are, however, that he will not raise his hand to secure the speaker's permission to ask his seatmate a question, nor even though teachers may have required him to use such forms during several years is he tempted to hold up two fingers at a ball park to signify that he wishes to speak. In order to accomplish the work of the school many acts not essentially wrong are inappropriate or inexpedient. The reason for refraining from these most children can be brought to recognize clearly.

It is equally important that the second function of government shall receive the most serious thought of the teacher. Out of the school's organization and morale must grow permanent habits and attitudes of cheerfulness, industry, optimism, frankness, accuracy, politeness, and success; they are not fostered by a lazy, unsystematic, indefinite, tale-bearing, cheating, or impudent schoolroom atmosphere. There is no danger that the average American school will overdevelop such socially essential qualities as obedience

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to the authority of the teacher to an extent which might result in undue subservience, showing itself in dependent attitudes after school days are over. Rather it is probable that the unchecked individualism of most pupils needs greater force in insisting that duties shall be done quickly and unquestioningly in response to command; there is a place for the military ideal, "Do *this*, *this* way and do it *quickly*." Those whose ideal is the loosely formed coöperating group with its intelligently optional "guided" activities are likely to undervalue strict obedience to constituted authority.

Whether a given mode of behavior should be permitted in the school depends upon its agreement with realization of the two purposes just discussed. Shall pupils be permitted to whisper, write notes, leave seats without permission, play marbles "for keeps," loiter on the playground after the signal has been given for assembling or dismissal, throw snowballs, run down stairways, play boisterously in classrooms, chew gum, choose their own seats at the beginning of the term, correct each other's papers? Relative to these and a host of other specific situations of school economy, concerning which inexperienced or mechanical teachers are ever asking, "What would you do if ——?" there can be no universal answer. Each must be referred to the great purposes of government.

Causes of infractions of discipline or lapse in morale. Several well-marked factors may be held to account for the teacher's difficulty in maintaining at all times the spirit of the best-governed school; these lead directly or indirectly to loss of sympathy and coöperation, — occasionally to serious disturbance.

1. *Instinctive tendencies of children.* First among these are the instinctive tendencies of the child. "Natural educa-

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tion" is a term which always wins applause though no one knows what it means. Certainly no one objects to making the educational process as natural as possible; thoughtful teachers give nothing more effort than the attempt to find means of approach in harmony with child nature, but education — and civilization itself, for which education fits — is a highly artificial development, achieved only through overcoming many primal tendencies. It rests upon denial of immediate satisfactions in view of a deferred and sometimes very remote good. In school a pupil must sometimes work when he prefers to play; with the most skillful use of "motivation" there is still much for which he can see no use, and he must move to some extent with his fellows, even when his own inclination might be to go faster or more slowly, or even to stop and fight. Instinctive and temperamental tendencies, — by definition the most fundamentally natural elements which enter into the makeup of those we teach, — very often lead in the opposite direction from the one in which education must go. No beginning teacher can afford to enter upon his work, planning to follow where child nature leads; he should expect to meet natural characteristics which have to be opposed and checked.

2. *Influence of some homes against work of school.* The influence of many homes is unmistakably against the constructive work which the school is set to do. If parental action is divided by open quarreling, the child comes to school with a very poor ideal of authority. If parents swear at their children, profanity becomes a matter of course. Though few teachers can realize the awful moral handicap which some homes place upon their children, thoughtful observation enables us to read much into a few

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symptoms, infer more, and thus understand with greater sympathy.

With regard to instilling the ideal of obedience, we do not know whether the typical American home is less effective than formerly nor how it compares in this respect with family life of other countries. Assuredly there was much complaint upon this score fifty years ago, and present-day accusations of the home are not confined to the United States. It seems that the home quite generally sends the school some rather hard problems; the former may do without obedience, or the usual relations may be reversed, the mother dutifully obeying every mandate of her six-year-old daughter; the latter must have obedience to the teacher. "John is a good boy, but he has to be taken just right; he is so sensitive that we can't reprove him." "He is so good-hearted and easily led." "I know it isn't good for him, but I always give the child just what he wants." "My boy is peculiar; he has a strong will like all his family; there is no use trying to get him to do anything he takes a notion against." Every teacher soon learns that this firm conviction "My child is unusual," is held by many fathers and mothers. Parental pride in a child's shortcomings causes no small unpleasantness, especially when he has been made aware of it by deprecating recognition of his irregularity as a life fixture not to be questioned.

3. *Popular educational discussion misunderstood.* Popular educational discussions have contributed to the difficulty of securing a healthy working spirit in the schoolroom. In the zeal to abate unquestioned abuses rhetorical statements of half truths are made which become entirely false when taken literally and applied seriously. "If I were a teacher and had a boy in my class who wanted to shout I should let him do

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it in the middle of any exercise," said one institute lecturer. "You should never kill his will; let him express himself." "No child should be required to study unless he has a live interest." The popular protest against memoriter methods leads the indolent child, with parental criticism of the school ringing in his ears, to refuse, if possible, all memorizing.

The effect of such discussions is humorously apparent in the case of the high school pupil who was asked why he hated mathematics. "I did not," he honestly admitted, "until I read that I ought to." Many otherwise intelligent persons have a vague feeling that pupils are asked to work because of some undefined stupidity of teachers or their obstinate delight in making children unhappy. Lack of appreciation of the fact that nothing comes of nothing reflects itself in misplaced protests against even reasonable standards and vigorous insistence upon performance.

4. *Mischief-inspiring school organization.* Occasion for lack of harmony is sometimes found in a vicious or mischief-inspiring organization of the school. Long codes of rules, most of which might better remain implied than expressed, serve the undoubted purpose of an exhilarating challenge to the daring spirit who wonders "what will happen if I do." Any plan which places young children upon their honor or gives advantage to one who prevaricates belongs in the category of immoral organization. A third-grade teacher asked at the close of every day how many times each had whispered and thereupon decorated the blackboard "honor roll" with dots in proportion to confessions. A few invincibly honest children reported truthfully, others lied shamelessly, and between these extremes there was much puzzling of little wits about moral values. "It's funny," said one who arrived at

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this keen analysis of the plan, " if I whisper five times *honestly* I get five marks but if I talk twenty times and then lie about it, it's all right." Other things are more worthy of being counted than " whispering "; if the counting is to be done it should not be under pressure. There are many schools in which lying is a lighter offense than taking a puff of a cigarette. Practices which result in such distorted moral views cannot be justified upon the ground of immediate results and certainly not when the larger function of government is considered.

No one need expect a school to operate economically or without an occasional assertion of undesirable traits when pupils are sentenced to periods of idleness or unprofitable occupation. A mischievous boy who in a poorly organized school had been considered vicious gave no cause for complaint under better management. When asked by a former fellow culprit why he no longer " started anything " his reply was, " It's like this: when I git one lesson done I've got to git the next and when I'm through with it, it's time for another and so on all day long, so what's the use? " In this case a skillfully devised work plan was the principal element in securing a new attitude.

The problem has similar elements when the work of the school affords little outlet for the customary activity of the pupil. This is especially true in the primary grades; it is difficult to turn to account all the restless movements of a six-year-old; the child who is three fourths physical activity enters a school which is based primarily upon mental development. Dewey's oft-quoted and most serviceable illustration of the fact that school desks are for listening — not for doing — explains in part why many children find nearly all school

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work a bore; it offers little of the motor type of activity for which their capabilities cry out. The introduction of manual and motor subjects is helping the morale of the school by providing an occasional oasis in what must appear to some a dreary desert of intellectuality.

Without lowering the esteem in which ability to deal with ideas abstractly is held, we no longer deem unworthy of school privileges the child who is dominantly motor in his endowments. The time may come when we shall consider the absence of motor subjects in the daily activity of the school a case of immoral organization. But aside from larger changes in the school itself, every teacher can find occasions for varying the nature of work to suit individual needs. "Substitution is better than repression"; guiding effort is more economical than restoring the proper status after an outbreak. For the irrepressibly restless there are errands and monitorial positions; if some of these have value only for the one who performs the service their invention is justifiable. The time to introduce such variations is just before the pupil has reached his limit of sitting still or has worked as long as he will.

5. *The teacher as the cause of school troubles.* The last and perhaps most frequent occasion of difficulty in governing and maintaining morale is to be found in the personality of the teacher. Certain personal characteristics render effective and sympathetic control exceedingly difficult. Weak personality undefinable though it may be, shows among its more evident traits inconstancy, inconsistency, lack of positive force in a straight direction. In school the teacher of weak personality seems not to be "going anywhere," and of course cannot carry others by an energy which he does not possess.

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A highly educated and professionally trained weakling is a poor substitute for the untrained but forceful leader with less learning. Vacillation, procrastination, lack of sympathy and trust of pupils, harshness and display of temper alternating with undue leniency, seeing all to-day and nothing to-morrow, together with the tactlessness of one who is small and self-centered, are qualities which ruin the morale of any school. To look within themselves for elements which may be the cause of friction is stimulating for most teachers; by this means they may be inspired to use measures for the improvement of their own controlling and managing ability.

Though not an indication of strength or weakness of character the teacher's voice is of great significance in governing. Because of rasping or strident tones, the voice itself may be an element of disorder. Too loud speaking is not worse in its effect than use of insufficient force; what seems a lack of positive attitude is often only vocal inefficiency. Moderately pitched, deliberate utterance is most likely to insure the "carrying quality" so essential for schoolroom economy. The acoustic qualities of bare-walled, low, or flat schoolrooms are likely to be poor, causing the voice to echo or resound; such conditions may sometimes be improved by the hanging of a few pictures or placing of other wall decorations. The teacher must continue to study the room to insure maximum advantage in the use of his voice.

Essential elements in maintaining morale. 1. *The school must have organized routine.* The school must have — not be — a machine. This means that many phases of organization should become automatic. The number of activities which may properly be reduced to habit varies with the size and type of the group. Manifestly a rural school enrolling five pupils

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would be guilty of absurd waste if it attempted to imitate the routine of a school with five hundred. The "Rise, pass," and assigned spaces at the blackboard of a class of twenty become ridiculous when two or three constitute the reciting group. The somewhat elaborate mechanical organization necessary in dealing with large numbers may give place to the informality of a household group when very few are involved.

Opposing opinions as to the proper amount of organization rest upon different conceptions of its purpose. Advocates of extremely informal discipline assume that school routine has value only for school ends; consequently, the less formality the better. Those who prefer more organized routine might show that home-like discipline, except in very small groups, is a wasteful impossibility; membership in a school which "goes like clockwork" or being part of a group activity executed with the uniformity and precision of the regiment on parade has distinctly valuable character consequences which the informally conducted school is not sure to offer. Such experiences do little toward developing initiative, resourcefulness, and judgment, but they do a great deal for the qualities of preciseness and uniformity in executing in groups plans made by those in charge. However students of education may disagree as to the extent of routine which should prevail, opinion is unanimous that, once conceded as a legitimate situation for mechanized action, the habit of the individual or group should be thoroughly formed; responses to signals or commands should be prompt and uniform.

2. *Initiate strongly and with a plan.* Initiate strongly; the work of the first day of school may illustrate. The purpose is to make a correct start, using expedients which may continue in service, and to launch with a distinctly business-

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like attitude which is indicative of the tone of the school. To insure these aims the teacher must familiarize himself beforehand with the physical resources and liabilities of the room and school; if new in the community he should be acquainted with the pronunciation of strange names found in the attendance officer's list or the previous year's register; he must know that work is provided for every possible pupil and that working material — at least paper and pencils — is available for all. If free textbooks are to be distributed, the recording system in use must be understood.

The teacher should know that the opening exercise is planned so that there can be no hesitancy. It is no time to ask, "Who will volunteer to play for us or lead the singing?" If the teacher makes a talk, it should be positive. "I hardly know what to say to you this morning," is no way for him to begin; his business is to know almost exactly what he has to say and his manner should indicate no doubt as to any next step. He who makes undue allowances for irregularities "because it is the first day" is borrowing from later reserves; better is a too strict than a too lenient attitude. Aside from essential preliminary steps which do not consume much of the school day there is little excuse for the malingering tactics followed in some schools by which pupils and parents get the notion that "nothing much will be done" the first day — or week. School terms are not too long, and school — real school — should begin when it is announced. If the term is to be one of well-directed effort, its initial day is worth more than any other in making it so.

The general tenor of what has been said with reference to the first day applies with equal force to getting all measures under way. Initiate strongly and with a plan.

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3. *Persistence essential to use of plans initiated.* Persistence is essential in any course of action when it is once initiated. Be sure you are right, then *go*, but nothing worth while goes entirely of itself. Eternal vigilance is the price of fine morale in school. The most perfect organization, initiated with tremendous momentum, runs down in a few days unless the teacher is alert. Almost everything is easier than hitting the line hard *every* time. Doing half of what is expected, letting the words in a column lose alignment, leaning against a support when supposed to stand clear, failure to form the straight line for which regulation calls, getting into seats or at work a little late — all are symptoms of relaxing spirit in the school. It is easy to overlook, but every lapse is registered in a descent which must be arrested, often with a spasmodic reform which leaves the plane a little lower than if the initial level had been maintained.

4. *Hold pupils to the obligation of the school situation.* Place the emphasis upon the work pupils are doing. No school is well governed and kept high in morale unless the work itself is master. Occasionally what seems a fine school spirit develops around the magnetic qualities of an unusual personality; unless the mysterious charm is sufficient to communicate an interest in what is being accomplished such "personal" teachers are likely to be greatly overrated — and hard to follow. The best teachers may be the most charming, but they must also possess ability to secure effort from those they instruct. The appeal, "Do this for my sake," is usually the ineffective plea of the weakling for whom pupils may have pity but little respect. The finest ties of personal influence are not injured by taking a firm, business-like, and impersonal attitude toward work to be done. As-

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sume the work relationship implied by the pupil's presence at school and hold him responsible for performance according to his ability. A daily schedule or study plan which keeps all properly conscious of what is expected has a powerful but not irksome influence; most children come to school expecting work requirements and rather willingly perform tasks which appear as the natural order of things.

Holding pupils to the obligation of the school situation is not merely a matter of quantitative requirements; they should be brought to realize that doing less than one's best is positively immoral. If slipshod work is accepted, it will be offered; the moral responsibility of holding pupils to their highest standard rests upon the teacher.

5. *Scholarship is an element of control.* Thorough familiarity with subject matter to be presented is requisite for successful control. "The eye of the master does more than his hands," is as true in the schoolroom as in the shop. No teacher can exert much presence while he has his eyes riveted upon the textbook page in a desperate endeavor to keep up with a reciting class, meanwhile conscious of the wisdom of casting an occasional glance over the non-reciting group of the usual classroom who are presumably at work. The poise and air of assurance which should be the inseparable endowment of every teacher are difficult to preserve in the presence of an inner confession of bluff. To teach in fear that a question may be asked which might expose the teacher to a charge of at least contributory negligence is a trying experience. The meager academic capital with which some begin their teaching career is the cause of many cases of failure in discipline set down as due to other defects. With increasing educational requirements teachers may begin their work

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with greater assurance of their preparation, but only daily planning of all anticipated teaching situations can insure the positive grip of the successful teacher.

Incentives. The character of the incentives upon which the teacher relies has much to do with the tone and effectiveness of the school. An incentive is that which incites to action, — an idea of a remote goal or purpose toward which the pupil directs his effort. Incentives have been classified as natural and artificial, low and high, negative and positive; a useful classification is made by Bagley, who evaluates them in proportion to their appeal to social rather than individualistic tendencies. Rigid classifications of school measures according to their incentive appeal cannot be profitably made except in relation to individual pupils in specific situations. The same objective attainment may be viewed as an end desired, or as something it is feared will not be achieved. Without attempting to determine the class into which the idea of any proposed end may fall, the general statements which follow hold true in most cases.

1. *Positive* versus *negative incentives.* Positive incentives, those which inspire to action through hope, are better than negative, fear inspiring. A promise is better than a threat. It is easy to see that the temperament of pupils often determines which appeal a given situation makes; one *hopes* he will succeed, the other *fears* he will not. The teacher who so organizes work that the maximum number spend their time in hopeful activity is realizing present economy while developing wholesome attitudes.

2. *Group* versus *individual appeals.* Appeals to group or social instincts are preferable to those which promise advantage to the individual. Generally speaking, incentives

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classed as "low" are individualistic. Working for "our" is better than for "my" advantage. Necessarily self-centered in early childhood, normal development brings the pupil ability to consider his school, class, or team.

3. *Only attainable ends effective as incentives.* The effectiveness of an incentive depends upon the felt possibility of its realization. Many incentives classed as "high" prevail but fleetingly with most children because the promised goal can be achieved only at a time so far deferred as to lie beyond their comprehension.

4. *Best incentives become ideals of lifelong value.* The best incentives are those which will continue to function in the life of the pupil after school days are over. From this point of view self-approval caused by doing a good piece of work is better than approval of the teacher, for the teacher's influence, however great, wanes after school relationships cease. One of the great purposes of the school is to develop ideals — the ability to objectify or think of one's self as he would prefer to be — so that they may be effective in shaping conduct. The pupil who is neat, accurate, industrious, thorough, or polite, because he scorns to think of himself as slovenly, careless, idle, a "quitter," or a boor, is actuated by the most dependable and lasting of incentives. Inspiring all children through their ideals to right deportment and use of their time will remain an ideal itself not attainable; discrimination in the use of other motives is a measure of the skilled teacher. Children may be scared into work, enticed with headmarks, promises of candy, holidays, or the "right" to erase the blackboard, but the effect upon character must be considered as well as immediate success in stimulating effort or present good order. Using the principles enumer-

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ated, it is not difficult to evaluate the devices commonly used as incentives.

5. *Incentives commonly employed.* (*a*) *Prizes.* Prizes have a positive appeal for a few who habitually win, arouse fear in a few whose intellectual superiority is not invincible, and leave the great majority, including those most in need of incitement, quite unconcerned except as spectators, since they realize clearly that prizes are not for them. If prizes are provided for all who achieve a given standard of excellence, average a given mark or percentage, or if they are awarded for specific degrees of improvement now easily measured in some subjects, their effectiveness is considerably widened in its application and the probability of jealousy and dissatisfaction with awards is appreciably lessened.

One objection frequently urged against all forms of prizes is that lessons learned under their stimulus are soon forgotten. This is probably an exaggerated accusation; perhaps if a subject is learned, or improvement made, the motive which prompted the effort put forth has little to do with permanence of acquisition. What is hastily or barely learned is of course not long retained, but such learning is not a necessary consequence of a prize system, and is commonly enough found where no definite incentive devices are employed. Tested from all sides, however, prizes cannot be accorded high rank as incentives.

(*b*) *Privileges and exemptions.* Privileges and exemption from the performance of tasks are extensively used as incentives. Preferred seats are made the prize of diligence; pupils whose work is uniformly excellent are excused from examination; high per cent of punctuality or attendance gives to the individual or group a partial holiday. Some of

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these and others of the same type are very effective, especially when they are made to appeal to a wider circle than typical prizes are capable of doing. Conspicuous privilege extended to a member of the school group is likely to result in dislike of the one favored as " teacher's pet "; excusing from regular school exercises deprives the one thus honored of what should have value for him; the practice tends to place such exercises in the light of something to be escaped.

(*c*) *Exhibition of pupil's work.* The incentive of an exhibition of the pupil's written work is limited, as are the others so far discussed, owing to the fact that a few pupils most in need of inspiration cannot produce a bit of creditable work even with heroic effort. A specific defect of such exhibitions is the tendency to reward the individual for small samples of his accomplishment wrought with infinite care which may in no sense represent his typical achievement. A very poor penman can sometimes *draw* beautiful letters. Added to these shortcomings display work is limited to a few fields in which technique counts; it does nothing for the encouragement of school activities in which *thinking* is the important element, nor is the difference between original and copied material usually evident.

(*d*) *Marks and promotion.* Marks (grades) have much in common with incentives already discussed; they appeal most strongly to those in least need of incitement. Promotion, usually associated with marks, exercises its greatest force in the upper grades and is most effective near the end of the term. Unfortunately " failure to pass " is by some teachers too constantly kept before pupils. With the child in whom it arouses greatest anxiety, failure to be promoted with his class represents nothing less than a breakup of his world. The teacher

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who is eternally threatening pupils with failure is using a cruel weapon so far as nervous or over-conscientious children are concerned, and a useless one for those less suggestible.

The question is occasionally raised whether scholarship marks should be affected by the pupil's deportment or a pupil's standing in history lowered because he does not spell or write well in papers upon this branch. There can be but one general answer to such questions — before the work is in the hands of the teacher for correction and estimate, the pupil should know exactly what is to be considered in giving final rating. The time to explain that the paper loses one per cent for each word incorrectly spelled is *before* it is written. According to his sense of justice the pupil whose work is thus penalized feels that he has been taken off guard and might have made a better defense if he had known what was expected. In general, children find it difficult to see the fairness of measuring with one mark two accomplishments as diverse as knowledge of history and penmanship or spelling. Both effectiveness as an incentive and clear understanding of what is expected are better served by using two marks in such cases.

The worship of marks so general in our schools has long been deplored, but no great progress has been made toward the ideal occasionally recommended of using but two ratings, satisfactory and unsatisfactory. With marks eliminated as incentives, emulation based upon comparison between pupils would be lessened and children would also lose the spur of comparing themselves with their own past records. Skillfully used, marks contribute much to successful operation of the school; abused, they easily become the occasion of misunderstanding and loss. The details of marking are discussed in Chapter IX.

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(*e*) ***The incentive of approval or praise.*** The incentive of approval or praise, whether of parents or teacher, has the advantage over those previously noted in making possible the rewarding of effort. Patient, persevering attempts sometimes fail to bring results above mediocre or inferior, or to produce achievement of which any good can be said if judged by a reasonable objective standard. In Andersen's fable the hare was given first prize because he was swift; the snail received second place for " though he required six months to cross the threshold, he broke his thigh bone in his haste "- effort. The hare and the snail are not more different than the extremes of ability among children in our schools. Most incentives take hold of the swift and strong; only praise and approval can reach the blundering and weak; perhaps more attention to distribution of commendation for effort would brighten school experience for many who quietly *endure* it. A little analysis might show that in many schoolrooms a comparatively small group of children who come from homes where parents are most helpful and appreciative monopolizes the highest marks, secures all prizes, produces most of the display work, and wins the unconscious approbation of the teacher by superior attainment. In the presence of such unequal distribution of the pleasanter features which vitalize the school day, may not simple justice demand that the teacher consider it part of his responsibility to seek diligently qualities, efforts, and attitudes which can be praised?

The amount and distribution of praise and commendation cannot safely be left to accident and the inspiration of the class moment. The teacher who expresses approval in careless praise of every effort cheapens what should be highly prized recognition, and soon finds himself adjective-bank-

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rupt — unable to give this incentive force. On the other hand, many excellent teachers dole out commendation in niggardly fashion so that pupils despair of pleasing them. " Oh well, no one can ever please *him*, so I don't care," is not the necessary accompaniment of high standards. The teacher who studies and plans the use of praise as an incentive, thinking of it in relation to each child in the room, has one of the finest means of preserving sympathy between himself and his pupils.

(*f*) *Socialized pride in reputation of room, school, or competing group.* Pride in the reputation of the school or room is a socialized incentive. Unlike most of those discussed, the pupil must substitute " our " for " my " in his thinking, — a great step in character development. Contests between rooms for highest attendance or punctuality records, rivalry between society or class organizations, and the keen ambition of the " A " class to excel the " B " class in deportment or scholarship are examples of such social incentives at work.

School spirit, often associated with noisy demonstrations of irregular and extra-curricular activities, when made to function in all departments of work may accomplish wonders. This may be illustrated in the high reputation of a village school situated where neither community course of study, building, children, nor teachers can account for its deserved preëminence, largely due to the skillful capitalization by the superintendent of the social instincts in rival groups. From primary grades through the high school, inter-class and inter-group athletics include nearly every member of the school in a team; rooms are divided for the purpose of contests in spelling, geography, and arithmetic into rival teams — " Tigers," " Hornets," and " Workers " — daily scores being

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kept like those of league teams. The school is a hum of inspired industry, loyalty to competing groups being equaled only by universal pride in the reputation of the school itself. The incentive value of such competing groups, and the fine loyalty and coöperation in teamwork which they develop, constitute valid arguments against maintaining schools in which numbers are so small as to make interesting contests impracticable if there is a possibility of bringing a larger group together by means of consolidation. Even in many large schools and classes, teachers are not using the device of competitive groups to the extent of its worth.

Pupil self-government. The plan of pupil self-government claims recognition both as a device for maintaining order and as an illustration of the forms of government in which pupil participation is designed to develop a life interest.

1. *Pupil self-government as a device of school control.* So far as the first claim is concerned, it probably requires greater reserve of governing power to insure successful operation than does the usual plan; enthusiastic advocates are inclined to ignore the fact that its most striking successes have been achieved by inspiring personalities, who could maintain excellent morale without its employment. No one should hope to subdue an uncontrollable school by this means. On the other hand, a teacher who is strong in organization and executive force can afford to initiate the plan which may solve many minor problems and result in a more coöperative school spirit. "Only he deserves freedom who could achieve it every day" might well be applied in this connection as, "Only he can afford pupil self-government who can govern well without it." The tendency to degenerate into a thinly masked system of spying and tale-bearing is the greatest danger to which pupil

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self-government is exposed. The practical consequences of, "I will have you arrested by the school police or monitor" are surprisingly like those of "I shall tell teacher on you," and the latter saves time, since appeal is made directly to the one who will finally exercise authority.

2. *Pupil self-government to develop interest in our political institutions.* The claim that pupil self-government accustoms children to participation in governmental forms, thus insuring life interest in our political institutions, brings to its support some plausible reasons. It is said that a school organized as a monarchy cannot train citizens for life in a democracy, and that the apathy of many toward the party organizations which perform such important functions in the selection of our officers is due to the years spent in a "boss" ruled school. Whatever validity there may be in such arguments, comparisons between the school and adult society yield conclusions of limited application; the school is essentially a monarchy since its leader, who exercises final authority, is not selected by the pupils. In the education of the typical American citizen intelligent participation in selection of those who are to govern is quite necessary; no less important is the development of willingness to be guided by or even to obey the expert whom democracy must select for leadership in much the same way as it does teachers, not of necessity chosen directly by those who are served and directed. Obeying and following legally constituted leadership or authority is excellent preparation for the many contacts with our officers which have no direct relation to electing them. As laboratory civics illustrative of government, pupil self-government takes its place with holding elections, conducting mock trials, and other dramatic means

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of putting vital meaning into the teaching of civic relationships and duties.

Corrective measures of discipline. 1. *Necessity of coercive measures.* In the school with the best government and morale, infractions of discipline occur which must for the good of the offender and group be met with corrective measures. The punishment phase of control looms large in the mind of the prospective teacher; he wonders what he would do if pupils proved unruly. And, unknown to him, the chances are that a group of hardy little spirits are wondering how far they will be able to go with the teacher next term, or even concerting schemes for executing maneuvers near the "perilous edge." In both these cases punitive measures assume undue significance, but they are far too important to be overlooked or dismissed with the easy statement that "the less said of them the better," though this may in practice be very true. A few statements of general principles and ideals may aid in determining a proper attitude toward school punishments.

2. *General suggestions for use of school penalties.* (*a*) *Look for cause of unsatisfactory conduct.* In every case of corrective discipline the teacher's self-directed question is, "*Why* did this happen?" Careful study may reveal some element of the situation against which outbreak is sympathetically understood. "How would this regulation, remark, neglect, or condition affect *me?*" Search for juvenile justification of unsocial deportment may change attitudes at once and lead to prudent adjustments preventive of overt rebellion.

(*b*) *The impersonal and objective attitude.* An impersonal and objective attitude must be preserved. The most troublesome pupil seldom has a personal grievance at Miss A. as an

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individual member of the community but he does with Miss A. in her present status as his teacher. He may be inclined to show specific animosity because she belongs to a class regarded as his natural oppressors or enemies. The teacher who can analyze the situation clearly finds an element of humor in the relationships involved. "He is trying to annoy the teacher (me) though I think he would like *me* were I not his teacher. And I as *teacher* must disapprove what he (pupil) is doing, though it would be interesting enough and perhaps amusing were he not a pupil and I not his teacher. For the time being I shall think of him as an organism — an 'it' — which is not working exactly right." Thus considered, being angry with a pupil becomes as impossible as it is ridiculous. "A musician does not strike his lyre a blow with his fist or a stick nor does he throw it against the wall because it produces a discordant sound; but setting to work on scientific principles, he tunes it and gets it into order. Just such a skillful and sympathetic treatment is necessary to instil a love of learning into the minds of our pupils." — (Comenius.)

(*c*) ***Assume innocence of wrongdoing or intention.*** Assume innocence unless the case is clear. The less evidence secured under any form of constraint, from witnesses or tale-bearing, equally hated by pupils and teachers, the better. Accusing a pupil is likely to prevent his confession, which otherwise might come either in words or amended conduct. The suspicion that the teacher is "down upon" him or "has it in for" him causes trouble, which giving a clean slate might avoid.

(*d*) ***Penalties awarded to prevent and not to compensate wrongdoing.*** Offenses apt to be repeated should be reckoned with rather than those not likely to recur. For this reason willful

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misdeeds must be noticed while the same actions without malice may be overlooked; intentional wrong-doing represents a fixed attitude which should be changed. No one can reasonably punish for what *has* been done; preventing repetition is the purpose. The wrong act done cannot be undone; corrective and coercive measures look forward, not backward.

(*e*) *Punishment severe enough to be unpleasant.* When punishment must be inflicted it should in some way hurt or be distinctly unpleasant. Punishing a bold offender by making him stand in a corner from which he slyly amuses the school by various antics is an example of a pleasant and ineffective penalty.

(*f*) *Sequential quality of punishment.* A punishment should be closely associated with the offense and if possible bear a sequential relation to it. The fundamental idea of natural punishment is of value, even though it cannot always be applied. Briefly stated it is the doctrine that the offender should take the natural consequences of his action without the interposition of other corrective force; it is learning by unguided personal experience. But experience is a slow, uncertain, and dreadfully wasteful way of learning; progress has been made possible only by finding expedients to avoid the direful consequences of false steps. The *natural* punishment of the truant would be that he should realize in adult life the need of the schooling he refused. Society, however, unwilling that he should suffer the consequences of irresponsible youthful neglect, compels him to attend school, and the teacher perhaps requires him to make up time lost in unexcused absence. Living in ignorance would be the *natural*, making up lost time the *sequential*, punishment of truancy in the foregoing illustration. Such sequential penalties have

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at least enough advantages to justify expenditure of effort in devising punitive measures of this type if corrective means must be employed.

(1) If not long deferred, they are unlikely to be misunderstood.

(2) Sequential punishments are likely to appeal to the pupil as reasonable, since, in a sense, they are self-invoked. If one wastes time, he makes it up; if too boisterous upon the playground, he remains in his seat at playtime and enjoys the playground alone; if he annoys those in front, he is given a front seat where there are none to annoy.

(3) Sequential punishments are likely to bring reformation, since the unpleasant association is made with the offense itself rather than with the entire undefined school situation. Many carelessly imposed penalties have little educative value because they lack this sequential relationship. Requiring a child to copy his lesson at recess because he pinched a classmate or failed to wipe his shoes properly is unreasonable; to require the same piece of work because he had written the lesson carelessly or wasted his time while others worked would make the right association.

3. *Commonly used penalties and corrective measures.* (*a*) *Reproof.* Reproof is most effective when given as a straight talk because of a definite act, to the pupil specifically concerned. Rare are the occasions, as when the offense itself is public, for administering reproof publicly. *General* reproof is hardly justified unless addressed to a group in which all members are implicated, since many who should give most earnest heed are immune to all such influences. If the misdemeanor is not too serious and the teacher knows how to utilize a fine sense of humor present in every schoolroom group, a mild form of

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good-natured satire is a proper medium which loses none of its effectiveness by being keenly appreciated. The use of such means is open to great abuse and should not be attempted unless the teacher is entirely sure of the spirit in which his remarks will be received. Promises or threats have no place in the teacher's repertoire. If uttered seriously, they are useless; if not, they are soon recognized as mere "bluff" and are pernicious in their influence.

(*b*) *Withdrawal of privilege.* Withdrawal of privileges which have been abused is a commonly employed sequential coercive measure. Justifiable uses of the plan are: separating pupils who whisper too constantly, removing monitors who are disorderly in performing their services, isolating the quarrelsome or too easily injured, or suspending the abused privilege of free access to dictionary or pencil sharpener which the rest of the group enjoy at will.

(*c*) *Keeping after school.* Keeping after school is an effective measure, sequential in its nature for a large number of irregularities which can be construed as a waste of time. Truancy, unexcused or needless tardiness, idleness, either directly apparent or made evident by failure to complete reasonable tasks, may sometimes be reached in this way. The use of this measure is limited by the fact that both teacher and pupils usually have full days without this addition, schoolroom temperature frequently becomes too low for occupancy soon after dismissal, and parents needing their children at home are likely to protest against this extra-legal lengthening of the school day.

(*d*) *Sending to the principal.* In graded schools, sending to the principal is a common practice. If the occasion is one of street or playground difficulty, the classroom teacher cannot

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always assume responsibility. Capable teachers seldom wish to employ this means for classroom offenses, since it tends to weaken their authority. The principal also resents a situation in which he is made a court of appeal with little opportunity for securing evidence. He very often sees immediately that the teacher is at fault but expects official support in the unreasonable position assumed. To maintain the " teacher's authority " without being unjust to the child is sometimes impossible. The best maxim to follow is, " The classroom teacher for classroom matters."

(*e*) *Corporal punishment.* Corporal punishment, from its former universal vogue, has receded until it is now forbidden by law or express regulation in some schools. Where it is not prohibited, many cases of corporal punishment in a monthly report is not an item to be proud of. Most teachers who govern successfully by use of the rod could do as well without it; few children who cannot be controlled except by this means are greatly benefited by it. In spite of all these amply demonstrated facts, there are still communities in which it is expected as a matter of course, so that managing without it is difficult. In schools where it has been completely abolished, many teachers favor the restoration of the *right* to use it. A safe practice for most teachers is to abstain from inflicting corporal punishment without permitting any understanding that it will not be used in a desperate situation.

(*f*) *Suspension and expulsion.* Suspension and expulsion are in a sense not school punishments, since their effect is to place the pupil more or less permanently outside of school influence. Either is confession of failure to meet the demands growing out of an abnormal, erratic, or spoiled child's disposition — at the same time keeping him in school. This is

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not of necessity admission that the school is at fault; the case may be hopeless, since the child is so defective, morally delinquent, or uncontrollable that he should be removed from contact with normal children. If a negligent home attitude is at fault, these measures sometimes enlist parental coöperation when all other expedients fail. So serious a step as driving a child from school is not to be lightly taken, and school laws seldom place power of suspension or expulsion in the hands of the teacher, reserving it as a power belonging to the board of education.

While depriving the child of school privileges should usually be the result only of serious breaches of discipline or incorrigible behavior, an unintelligent zeal for education which complacently declares that "no one ever regrets time spent in school" sometimes leads to toleration of good-natured, well-behaved idlers in attendance long after compulsory school age; it would be far better for some of these, for society, and certainly for the efficiency of the school in which they occupy needed space and at least a small share of the teacher's attention, if they were guided to a place in the productive industry of the community.

In such cases a talk with pupil or parent or both is preferable to formal action. "How much were you earning when you left work to start to school?" said a teacher to a seventeen-year-old boy irregularly classified in the seventh grade. The wages being named, the teacher said, "And do you think you are earning that much now, learning anything, or becoming a better man because of being in school? Frankly I do not think you are." "I never thought of it that way before; I believe I am just loafing; I think I'll go back to work." This pupil had attended irregularly for years, and there seemed

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little in the school work upon which he could organize his effort. Of course it would be better if defective foundations through irregular attendance were impossible; the school should make adjustments; continuation schools may sometime be provided for such cases; but until these changes are made the greatest service the school can render such a pupil is to help him to find himself. The length of time he is encouraged to belong is not a reliable measure of the advantage derived from attendance. School tasks not taken seriously are morally a poor substitute for a trade or occupation recognized as fully worth while.

Exercises

1. (*a*) "Bear constantly in mind the truth that the aim of your discipline should be to produce a self-governing being, not to produce a being to be governed by others." (Spencer.)

(*b*) "All teachers who deserve the name now recognize that self-control is the ultimate moral object of training in youth — a self-control independent of temporary artificial restraints, exclusions, or pressures, as also of the physical presence of a dominating person; to cultivate in the young this self-control should be the steady object of parents and teachers all the way from babyhood to full maturity." (Eliot.)

Find other quotations relative to the purpose of school government.

2. In the government of a school what is the place of such expressions as "Please," "If you please," "Thank you"? Rank the following as assignments of work:

(*a*) I want you to take the next problem.

(*b*) Take the next problem.

(*c*) Take the next problem, please.

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(*d*) Next take the next — the one after the one *he* had. I mean the third one.

3. Give an example in which school discipline was made more difficult by a lack of understanding between home and school; a case in which disciplinary problems were simplified by a conversation between teacher and parent.

4. If the teacher has made the wrong command he may rescind his order, explaining that he has made a mistake, or forget to enforce his directions. Which is the better plan?

5. A teacher was endeavoring to break up spontaneous answering of all questions in a large class. In spelling she pronounced "Sold — the calf was sold for —— how much anyhow?" "Two dollars," chirped one over-ready pupil. "Five." "You mean a hundred and five." "Aw, that's too much," followed in quick succession. Who caused the lapse in reform of class etiquette?

6. "There are a few principles that every teacher who wishes to be well liked by his pupils should keep in mind. Some of these are as follows:

"Cultivate a genuine sympathy with your pupils, don't try to assume it. In this you cannot successfully make believe. If you have no real interest in your pupils, they will soon detect the fact. You cannot fool them even if you fool yourself. To gain this sympathy you must strive to understand the nature of boys and girls, if you have forgotten yourself what that nature is. You must try to find how their minds work; what they think and feel; what their hopes and ambitions are.

"Do not let your sympathy run away with you. If a pupil has been delinquent in his work or in his conduct, hold him accountable. The kind teacher is looked up to; the 'easy' teacher is generally despised. . . ."

"Do not attempt to gain favor by being undignified. You cannot be on the same level with your pupils, neither do they wish you to be. You may be their advisor and their model, you cannot

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be their chum." (Colvin: *Introduction to High School Teaching*, 81–82.)

Describe school situations which illustrate the truth or falsity of the foregoing propositions.

7. Bagley makes the following classification relative to objectionable teaching voice: (*a*) shrill, rasping; (*b*) loud, noisy; (*c*) inarticulate; (*d*) thin, feeble; (*e*) monotonous. Toward which of these does your voice tend? What measures may be taken to improve it?

8. Of the high school teacher who during the first year of experience finds difficulty in maintaining discipline, an inspector says,

(*a*) "He lacks self-confidence; he is afraid of himself and afraid of his pupils.

(*b*) "He cannot adequately imagine consequences; he lacks the ability to picture what is likely to occur; he does not know the first symptoms of disorder.

(*c*) "He does not initiate the proper habits of class attention and provide the necessary routine from the outset. He lets matters drift until the class has acquired bad habits and the situation becomes critical. Then he often acts too late." (S. S. Colvin, in *School and Society*, VII, 451.)

To what extent would this apply in discipline of elementary grade rooms? What differences exist between the disciplinary problems of the high school and of the grades?

9. An industrious high school graduate became the teacher of a rural school. The first day, after calling pupils together and securing their names, she gave each a list of the new books he would need and sent all home to secure books. This was in imitation of the practice in the graded school which the young woman had attended. Naturally this was not a good beginning in the rural school. The patrons of the school said, "Just like those town girls; most of them have no sense." Her high school teachers

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said, "She was one of the best in the class; her mistake is surprising." The county superintendent said, "If she had been required to have a year of professional training, this would not have happened." The teacher herself said, "I see no reason why it is worse to waste a day in a country school than in town; we always wasted the first day while I attended."

To what extent are all of the foregoing remarks true? If you were a rural school teacher, what specific measures would you take to insure the success of the first half day?

10. The following games are prohibited in some schools: crack-the-whip, wrestling, boxing, playing marbles for keeps, snow-balling. What are the objections to them? What is the best way to manage each? Aside from his disciplinary function, what are the playground responsibilities of the teacher? It is generally conceded that the secret of playground discipline is to keep something going all the time. Name ten games you could introduce when pupils are tired of the sports they have been using.

11. Make an analysis of one pupil's school day into the elements of play, work, and drudgery as you understand these terms. If drudgery is present in some degree, how might it be transformed into work or play?

12. A school was organized into rapid calculation teams and a record of contests kept. To make sure that every pupil was given opportunity to do some of the kind of work in which he had the greatest ability, the teacher usually gave the same number of examples in each process, *e.g.* addition, subtraction, cancellation, addition of fractions. Five points were awarded for the first correct result, three for the second, and one for a third. The score card which was posted after each contest showed the team record and the score of each individual; it was cumulative, including not only the day's results but the total of points won during the series. The pupils made the score cards under the teacher's direction. Make a card suitable for use in such a contest. List

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precautions necessary to secure the success of a contest series of this kind. Work out definite plans for similar exercises in other subjects.

13. The French government awards every year thousands of dollars' worth of school prizes for excellence in scholarship. What would be the gain and the loss if such a prize system were introduced in this country?

14. All are familiar with the power of fashion in determining conduct. Give examples of "fashion" in school deportment. What class of pupils are most influential in setting standards of school behavior?

15. What would be gained by having monitors elected by pupils instead of appointed by the teacher?

16. "One more evidence that the teacher is using his authority in the professional spirit will be his exercise of it impersonally and dispassionately. This will show itself not only in the classroom, but also in the interviews which he has with parents. Always will he consider the pupil offender as one who has violated the law or outraged the rights of his fellow pupils; never will he accept the pupil's misconduct as a personal affront to himself. Moreover he will deflect the parents' attempts to put his child's wrongdoing on this personal basis. Frequently is the mother ready to extend her sympathy to the teacher. 'I know,' she says, 'John must be a great trial and annoyance to you.' The teacher should promptly disclaim the need for sympathy. John has not annoyed him; John *cannot* annoy him. This is not a personal matter between John and his teacher." (Perry: *Status of the Teacher*, 65–66.) According to this very reasonable statement it is part of the teacher's work to deal with children considered "troublesome." List peculiar problems of other professions which seem to you annoying but are probably regarded in the same impersonal way by those whose business it is to solve them.

17. A short pencil whizzed across a quiet schoolroom from such

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a direction that the teacher was in no doubt as to the missile thrower — a newly entered boy of bad reputation. Detaining the lad a moment at recess, the teacher, instead of making accusation, said quietly, "Tom, this pencil was thrown against the wall an hour ago; I wondered whether you happen to know anything about it." The boy readily denied all knowledge of the matter and was dismissed; nothing more was ever heard of the misdemeanor, and no more throwing occurred. The temptation to accuse the pupil of the deed and of the falsehood was very great but this would have thrown him out of his last year of schooling, which he used to great advantage. In this case the pupil's deed and ready falsehood were survivals of an earlier attitude which vanished after he grew accustomed to the new school environment. Give examples in which change of teacher or school wrought transformation in a child's school conduct.

18. The following offenses must sometimes be reckoned with. Make a tabulation showing the probable instinctive origin of each, whether you would consider the offense always wrong or that its moral status depends upon circumstances, and show appropriate means which may be used in dealing with it. As an illustration take *fighting*, caused by rivalry, jealousy, or pugnacity; sometimes right, sometimes wrong to fight; isolate or segregate the aggressor unless he has been worsted in the encounter.

Fighting, swearing, smoking, whispering, note writing, obscenity, cheating (copying other's work), lying, stealing, scuffling, teasing, vandalism, gambling, disobedience, whistling in classroom at intermissions, giggling, dropping books.

19. In the days of Jonathan Edwards it was not unusual to make such lists as the foregoing and catalog the evil spirits which prompted each action not in harmony with the purposes of the school. One writer listed several hundred such "devils", as they were called. A modern writer, on the other hand, endeavors to show a direct ratio between excessive schoolroom tem-

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perature and lapses in discipline. What is the essential difference between the theories concerning child nature?

20. To what extent would you regard each of the following considerations in measuring the effectiveness of punishment: — retribution, reform of the offender, approval of the offender, an example to the school, making the teacher feel better?

21. After exhausting every ingenious resource without securing work upon the part of a stolid youth of sixteen, the teacher said to his father: "Have you anything for Don to do? I have tried every plan I know to get him at some profitable school work and have failed. His deportment is not bad and he is not much in the way, but it seems a shame that he is accomplishing nothing for himself or for any one else." With a comprehending grin the father said, "I've wondered about that sometimes; I never could get any work out of him. I'll let him drive the ice-wagon."

Account for the presence of such children in school. Is it right to permit them to continue in school doing little or nothing when their services are greatly needed in the field of unskilled labor or in learning a trade? Give reasons for approving or condemning the course pursued by his teacher.

Readings

Bagley: *Classroom Management*, II, III, VII, VIII, XII.
Bagley: *School Discipline*, especially IV–IX.
Colvin: *Introduction to High School Teaching*, IV, V (Discipline).
Morehouse: *The Discipline of the School*, IX, XII–XV.
Perry: *Discipline as a School Problem*, XVII–XIX.
Scott: *Social Education*, III–IV (School as monarchy and as republic).
Spencer: *Education*, 162–227 (Moral education).

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CHAPTER VI

TEACHING — THE ASSIGNMENT

The importance of instructional ability in teachers. The essential purpose of the school is characteristically realized in "instruction." Teaching, as the word is usually understood, indicates imparting information, building habits, or forming ideals through the direct efforts of the teacher in the use of subject matter. The teacher who is a good instructor is often successful in spite of many other shortcomings; one who cannot instruct is a failure regardless of eminent social qualities, pleasing personality, or even thorough scholarship. Ability to instruct is the chief attainment which distinguishes the professional teacher from others in the community; it is primarily because of this ability that society selects and supports him. It is exceedingly unfortunate for any community in its employment of teachers to proceed upon the theory that a high degree of technical skill in classroom instruction is unnecessary or unimportant so long as pupils are in charge of good and intelligent persons. Great skill in the technique of instruction is absolutely required of every teacher if the school is to do its work well. Not every beginner can be an expert instructor, but no one preparing to teach should for a moment lose sight of the fact that skillful *teaching* is the distinguishing mark of every one who has a moral right to be in charge of a classroom.

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Significance of terms — teaching, instruction, lesson. Since teaching and instruction are terms generally used and understood, in this and succeeding chapters no attempt will be made to limit their meaning, though instruction will be employed to denote teaching activity which looks toward building up knowledge, as contrasted with "drill," designed to establish habits. Another term used somewhat loosely in the popular sense is "lesson," denoting many kinds of work in the teacher-pupil relationship. Teaching, instruction, learning, and lessons are all convenient terms universally employed and sufficiently definite in meaning to admit of no confusion in the mind of readers through failure to limit their application.

Divisions of lesson — assignment, study, recitation. All teachers are familiar with the division of lessons into the steps of assignment, study, and recitation, and this conventional usage is followed here. Low standards of professional preparation and the consequent poor teaching in many parts of the country have given these terms in the minds of a large per cent of the school public a very definite though too formal and entirely inadequate significance. The conception of the recitation as a time for testing pupils upon what they have been able, unaided and unguided, to acquire from a textbook; of study as preparation to meet such tests; and of the assignment as a momentary though emphatic injunction to "take the next two pages," "ten words," or "the next lesson" is responsible for much complacently bad teaching. It is hoped that a reading of the following pages will result in a broadened conception of these three terms as well as increased proficiency in conducting each phase of class exercise. The fundamental point of view is that the class period should face

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forward instead of backward; that emphasis should be upon what the pupil is about to study rather than what he has already prepared; and that teaching should replace much of testing. All this means that the assignment must be given a more prominent place than is usually accorded it.

What the assignment must accomplish. The assignment includes teaching exercises which have for their chief purpose the setting of problems and giving directions and inspiration for lessons to be mastered or acquired by pupils. To realize its purpose the assignment must (*a*) show clearly what is to be done, (*b*) inspire pupils to perform tasks set before them, (*c*) direct attention to difficulties and point the way to overcoming them by giving suggestions as to use of aids and references, (*d*) show the organization of subject matter, including relationships not likely to be discovered by pupils, (*e*) place study material upon such a plane qualitatively and quantitatively as to meet the needs and abilities of the class. Each of these points will be briefly elaborated.

1. *The assignment shows clearly what is to be done.* The assignment must show *clearly* what is to be done. It is inconceivable that good teachers should impose tasks upon pupils without perfect comprehension of what they are requiring. But assuming that this is true it signifies little compared to the requirement that the pupil shall also comprehend. The assignment is for the pupil; what he understands is what the teacher has said. "You misunderstood my assignment" is a poor explanation even when one or two have honestly prepared the wrong lesson, and is no defense at all when the majority or all of a large class have followed mistaken directions. "Did I not tell you to copy the first series of words? And now you have all copied the second; why didn't you pay

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attention?" The spirit of the reproved class should say, "No, teacher, you did not call for the first. Evidently there was something in your words or the entire setting when the task was imposed which made it reasonably clear that you expected the second rather than the first. Perhaps you cannot explain the misunderstanding, but if you are displeased with the fact that the wrong lesson or two or three wrong lessons have been prepared, the displeasure should be with your own lack of clearness." "I didn't know what she wanted so I didn't study at all," is another result of an ambiguous assignment. The directions which leave the teacher's lips are of no importance when weighed against those which arrive in the mind of the pupil. To be obscure is to be misunderstood.

Lack of clearness is often due to the hasty method of assigning tasks. If there is one part of the teacher's work which cannot be hurried it is the assignment. Only ignorance of good teaching can account for habitually deferring this vital exercise until inadequate time or suspense due to an expected dismissal bell prevents its careful completion. In addition to taking sufficient time, using forethought and knowledge of pupils and having a carefully planned statement of what is to be done, it is usually well to ask a member of the class to repeat the assignment. If the outline of what is to be done is long, it should frequently be written. In no assignment is clearness more essential than in preparation for field-trips, excursions, demonstrations, or other forms of instruction which involve unaccustomed situations; otherwise unusual and irrelevant elements yielding only incidental values dissipate all the pupils' energy, or the presence of a complex situation results in confusion. If references are given to children, they must be specific if definite results are

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expected. To specify pages and indicate what each reference contains is far better than to say, " There is something in this book or that chapter related to our lesson." As pupils become older, they are better able to find their own readings, and of course fragmentary reading in books loosely referred to has a general value; but such activity should not be confused with study of a given lesson.

2. *The assignment must inspire performance.* The assignment should inspire pupils with a desire to perform the task given. In the preceding paragraph responsibility for preparation of the wrong lesson was laid upon the teacher; more numerous and more serious are the instances in which pupils make no adequate preparation, or even fail entirely to do the work assigned through failure to take seriously what has been given. No assignment, however clear, which does not carry with it sufficient motivation to insure vital and sustained attention to the matter in hand is effective. Subject matter which the pupil can immediately make use of in the problems of his daily life easily lends itself to interest-compelling assignment. A class told to write a real letter challenging another school to a contest, with the understanding that the best letter will be sent, needs no urging to do its best in letter-writing, though doubtless many pupils are wise enough to realize that their letters are not likely to be selected. Occasionally it is possible to utilize the subject matter of the assignment to meet an actual need growing out of the life of the pupil or school, and every wise teacher is alert to find such opportunities.

In a much greater number of cases the so-called problem of the pupil is not one in which he is vitally interested, but, having accepted the project as part of the established school

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requirement, he may be made to realize that many minor problems must be solved in achieving the end. Of this nature are most attempts to teach spelling or writing in immediate relation to cooking or sewing projects or the school garden. It is difficult to devise real situations in which good handwriting or correct spelling seem essential, since a legible scrawl, incorrect spelling, and ungrammatical language are seldom misunderstood in such work; it is probably safe to assert that motor and manual projects seldom present imperative needs for formal subjects; they do, however, afford opportunity for considerable practice of these arts in conversation — skillfully devised situations which wide awake teachers quickly turn to account.

A degree less concrete but quite as effective with many children is the use of curiosity or the speculative interest in playing upon purely imaginary situations. Of this type usually are such questions as "How long would it take a picnic boat to float down a river?" Many questions in literature and history are of this type. "How would Robinson Crusoe prepare to defend himself?" or "Would you have taken sides with George the Third or George Washington in the Revolutionary War? Why?" In such cases the pupil often identifies himself more or less dramatically with a situation remote from his own immediate interests but with as much zest as if the problem were one of his own little world.

In the large number of cases in which *school* motives must be relied upon, practical psychology suggests endless opportunities to utilize important capacities and interests, native and acquired, to avoid undue exercise of the teacher's *fiat* to insure performance of tasks assigned. Rivalry of in-

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dividuals and groups in contests, suggestion, and all the incentives mentioned in the preceding chapter are available. And back of these forms of motivation, more or less external and not indispensable, is the general situation in which it is legitimate to assume that the teacher may command and pupils must obey. "You must get this lesson because I tell you to" rests upon the necessary relation of pupil and teacher but it is not wise to obtrude unnecessarily this undoubted authority. Without the general pressure of the school situation which presupposes that pupils will perform the tasks assigned, they would probably find most of the teacher's reasons for study quite unconvincing; used consciously as the only means of motivation, commands are likely to be resented.

Granting the pupil's willingness to perform his work, desire to accomplish must be accompanied by proper feeling tone, a confident sense of ability to do what is required. Great battles are won by soldiers who believe they can win; the team which expects defeat is half defeated. The secret of the success of many otherwise not remarkable teachers is their ability to make pupils believe in themselves.

3. *The assignment should direct to difficulties and means of overcoming them.* The assignment should direct attention to difficulties likely to be encountered and point the way to overcoming them, including directions for the use of such helps as are available. Careful recalling of one's own struggles as a pupil often revives the difficult situations with a child's point of view. Teaching experience soon shows that points obscure for one are obscure for another if classes instead of individuals are considered. Arithmetic textbooks used by many classes tell by their thumbed and dog-eared pages that the same

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processes perplex nearly all. The same questions are asked by puzzled pupils of every school. So far as possible it is the business of the teacher to anticipate such difficulties and, without removing need for effort, so direct that effort may succeed. Nothing is gained by blind toil expended in trying to overcome meaningless obstacles. The number of questions asked by pupils has sometimes been assumed as one measure of interest; questions of a certain type and needless incoherent appeals for help upon what should have been consistently clarified in the assignment are good evidence of poor teaching.

Skillful analysis usually shows that the difficulties encountered by children in preparing lessons are specific and often very small elements of a large complex, all the rest of which is understood. As illustrations, the pupil who finds trouble in solving such examples as $4\frac{1}{3} - 2\frac{7}{8}$ may comprehend every step except that he must "borrow" from the integer in the minuend; the entire significance of a poem may be lost owing to the presence of an unfamiliar word, or one to which a wrong meaning is attached as *gambol* in "the lambs *gambol* o'er the *green*." As the pupil acquires ability to study independently, specific directions in the use of available helps become part of the assignment; dictionaries, atlases, and encyclopedias often remain unconsulted because of vague uncertainty as to how they may be brought to bear upon a doubtful point.

In addition to foreseeing obstacles and avoiding waste, the teacher can by skillful persistence develop in most children the custom of careful checking and "taking account of stock" when a seemingly impossible situation is met. "How much of this am I sure of?" "Which of these lines are correctly drawn?" and "Just what is the matter here?"

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The attitude represented by such questions is more effective in arriving at an understanding of problems and much better for the pupil's development than yielding to the panic impulse to try every expedient which suggests itself, however unreasonable, or the discouraging utterance of a petulant, "I can't." Thus it is part of the assignment not alone to foresee and obviate needless obstacles, but also to foster a rational attitude which may enable the pupil to find specifically the source and nature of his own difficulties.

4. *The assignment should point to relationships not likely to be discovered by pupils.* The assignment should direct attention to the organization of its subject matter, including peculiar relationships which may lead to greater facility in comprehending or fixing it in mind. Simple illustrations which seem so evident as to need no mention are the procession of digits in the multiplication table as $9 \times 1 = 9$, $9 \times 2 = 18$, $9 \times 3 = 27$, in which the units' figure is successively 9, 8, 7, 6, . . . ; the use of derivatives in assigning a vocabulary, as

navis — ship — suggests navy
fabula — story — suggests fable
liber — book — suggests library

Most pupils are not ingenious in discovering such relationships; it is not safe to assume such analytic ability, and the assignment can save waste for twenty-nine of a group by suggesting a relationship which would probably be discovered at once and unaided by the thirtieth member of the class.

5. *The assignment must place before pupils the proper amount of work.* The assignment must be made with due regard to the advancement of the class. The amount of work which

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pupils can accomplish is limited by the time at their disposal; the quality or grade of work by previous experience and training. Inexperienced teachers, especially, are liable to make the mistake of expecting too much. Accustomed to their own standards or those of the school last attended, it is impossible for a time to realize that their pupils are working most diligently but upon a lower level. Assignment of too much work develops an attitude of indifference upon the part of pupils and soon deprives the teacher of power to secure completion of even a reasonable amount of work; requiring the impossible convinces a few pupils that all requirements may after all be unimportant. Another bad consequence of assigning too much is the encouragement it lends to hasty, skimped, or poorly done work. Before making assignments the teacher should know accurately how much time the pupil has and how fast he can work without uneconomical haste. By being sure how many lines a pupil can copy in a minute or how long he will need in solving a problem of a given type and the answers to other similar questions the teacher should be able to avoid the waste of excessive assignments.

Assigning work which is qualitatively wrong, that is, too simple or too difficult, is the cause of as much waste as attempting to require too much. If work is too elementary, the attitude of the class is usually a means of enlightenment to the teacher, though of course not infallible. "We've had that," "They study *that* down in the fourth grade," and similar expressions are familiar to every teacher who has had occasion to give belated instruction in necessary subject matter which has been omitted or badly taught. Resourceful teaching can nearly always avoid offending juvenile pride by presenting such matter plainly named as *belonging* in a lower

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grade. If a pupil has erroneously formed the opinion that work is too simple, a few lessons should convince him of his mistaken notion; if material is actually too elementary, the teacher should make the discovery quickly. It is the bright pupil with nothing to engage his time who constitutes our greatest problem of wasted energy.

The effect of assigning too difficult work is much the same as that of requiring too much. This question is later discussed in relation to home study; here it may be said that the teacher must be constantly putting to himself such questions as: "Has previous work prepared for this? Can the pupil *read* his arithmetic problems, or *pronounce* the words of his spelling list? Does he understand directions for a home experiment? How do *I know* he can?" All such questions should be answered satisfactorily before the assignment is completed. To request or command a pupil to perform what is impossible for him is excessively bad for his study habits and damaging to his general moral attitudes.

Questions relating to the mode of assigning lessons. 1. *Place of the assignment in class period.* Should the assignment precede or follow the recitation; occur at the beginning or the close of the class period? For small children with whom study directions are not long remembered it should come last. With all others much is gained by giving first all technical directions for preparing the next lesson. Such procedure assures an abundance of time and, in a sense, places a class upon its honor by assuming that the lesson of the day has been mastered. It is seldom necessary to reassign, and the moral influence of taking prepared lessons for granted is worth enough to compensate for occasional readjustments when this proves not to have been the case.

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2. *Time required to make assignment.* How much time should be given to the assignment? Generally speaking, a great deal more than most teachers devote to it. It is better to think of the assignment as a phase of instruction rather than a daily part of a class exercise; it may require a moment or the entire period. With many teachers a complete lesson of one hour including assignment, study, and recitation would be divided about as follows:

I.	Recitation on previously assigned work . .	25 min.
II.	Assignment	5 min.
III.	Study	30 min.

Better teaching would result if the division of time could approximate:

I.	Quiz—questions upon previous assignment,	5 to 10 min.
II.	Recitation, including assignment . .	20 to 25 min.
III.	Study	30 min.

Both time divisions accept the usual situation of a reciting and a studying class in the room at the same time. The second differs from the first in giving more attention to the lesson which is to be studied and less to the one which has been prepared. Past effort must be thoroughly tested, but five or ten minutes of sharp, well-organized questioning should be sufficient for the purpose if careful planning for this quizzing exercise has been made. With the greater part of the teaching period directed forward rather than backward much of the waste usually associated with the study period should be eliminated. Such a distribution of time should help to turn " quizzers " into teachers.

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3. *Individual assignments.* To what extent can individual assignments be used with profit? Individual assignments may indicate weakness in teaching, as when after repeated failures to secure serious preparation of lessons the teacher, with a desperate appeal, gives each member of the class a fragment of the lesson all should learn; such teaching is often exhibited in history classes if the teacher has failed to excite interest in the subject or is weak in organization. The individual assignment may, however, indicate skillful teaching when made a means of meeting needs of an atypical pupil or part of a socialized school exercise to which several contribute. Special reading or arithmetic exercises for the pupil who has been absent or who meets unusual difficulties are examples of provision for individual cases. Some of the most vitalized reading exercises are those in which each has prepared an assignment entirely unfamiliar to other members of the class and reads it aloud.

It cannot have escaped the reader that many of the topics treated in this chapter are inseparable from consideration of the study period. A well-spent study hour is hardly possible unless it follows an assignment that accomplishes the purpose which have been set forth. After discussion of the recitation important practical phases of study itself will be considered.

Exercises

1. What is the meaning of the expression occasionally heard, "He is a good teacher though he cannot teach very well"? Of what other professions are similar remarks made? How do you account for the fact that technical skill is sometimes not considered necessary for teachers?

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2. What reasons can you give for preferring either of these forms of assignment?

(*a*) "To-day *I want you* to prepare . . ."

(*b*) "To-day *our work* is to prepare . . ."

3. Make a study of teachers' assignments for the purpose of discovering waste due to

(*a*) unnecessary copying of questions by pupils or teacher.

(*b*) allotting tasks which pupils are unable to perform.

(*c*) giving the assignment after the class has been dismissed.

4. Write an assignment of the following lessons:

(*a*) Ten examples in addition (third grade).

(*b*) A reading lesson (fourth grade).

(*c*) Three stanzas of poetry to be memorized (fifth grade).

(*d*) A spelling lesson for sixth grade using these words:

independent, government, honorable, governor, national

(*e*) Lesson in map study of the United States (seventh grade).

5. In assigning lessons the aim as stated for pupils may differ in form from that which is used by the teacher in his own thinking. It should usually be more direct and concrete. In each of the lesson assignments of the preceding question formulate aims which might appeal to pupils.

6. Division of subject matter according to the number of days allotted for its completion becomes an important part of every teacher's work unless the course of study is so minutely prescriptive that each day's material is indicated. Using textbooks, outline lessons in spelling, arithmetic, language, or geography by days for a week or a month.

7. Pupils of peculiar temperament are sometimes unnerved or made to work under undue tension by fixed assignments such as "Solve the next *ten* examples" or "Answer *ten* questions." What would be the effect of making assignments like the following: "Solve *about eight or ten of* the examples on the next page." "Choose *three fourths of the questions* in this list."

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8. A teacher who was conscious of being weak in power of impression seized upon the assignment as an opportunity to impress pupils with the thought that he was "deep" by use of large words and obscurely long sentences. What is the effect of such assignments?

Readings

Bagley: *School Discipline*, VI (Individual assignments).
Charters: *Methods of Teaching*, XVIII.
Colgrove: *The Teacher and the School*, XIX.
Colvin: *Introduction to High School Teaching*, 236–243.

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CHAPTER VII

TEACHING — THE RECITATION

No teaching without learning. The recitation — the central activity of the school — includes the exercises in which the teacher as instructor and pupils as a class take active part: the former instructing, telling, repeating, emphasizing, or quizzing; the latter learning, inquiring, settling doubts, and reorganizing experience. The terminal parties are the teacher and the learner, both working in inert subject matter which must be made to glow with life if the exercise is to be worth its time. It should be realized at the outset that the learner no less than the teacher is active; to speak of the teacher and the taught is misleading, since it suggests passivity of one of the indispensable persons in the teaching process. If pupils merely tolerate the teacher's efforts, making no exertion themselves, there is no learning and accordingly no teaching. It is a case in which there can be no object without an indirect object; no one can teach arithmetic or geography without teaching it *to* some one who is actively learning.

All this seems evident enough, but many teachers prove by declaiming at or over an inattentive, indifferent class that they have not taken this lesson seriously to heart, though all such effort is quite idle. It is with this understanding constantly in mind that the chapter should be read; no teaching without learning, no learning without activity of the learner,

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and the learning alone measures the teaching. "I think we may say that methods of teaching are good just in the degree that they make the student (pupil) a partner in the enterprise of learning." [1]

The purpose of the recitation. 1. *Aims of pupil and teacher.* As indicated in the preceding paragraph, the purpose of the recitation must be stated from the standpoint of both pupil and teacher. The probable mental attitude of the pupil, trivial though it may seem, cannot be ignored; he may desire to puzzle the teacher, defeat or outshine a rival, atone for previous insufficiencies of preparation, impress the teacher, "show off," or be genuinely and ardently desirous of finding out about an interesting subject; on the other hand, he may not look forward to the recitation with any clearly defined aims. The teacher is more likely to have definite purposes; to explain or help over difficulties, to tell or describe to pupils, to organize, emphasize, and fix, to test or quiz with the purpose of revealing equally the weakness of previous teaching and pupils' preparation, to build up the confidence of the timid, convince the unprepared of his unreadiness, or even occasionally to puncture inflated self-esteem.

2. *Aims determined by nature of work.* Though the teacher's purposes may thus be particularized indefinitely they are briefly stated, as determined by the function to be accomplished, as (1) instructing, (2) testing, (3) drilling, (4) guiding appreciation and enjoyment. In practice these cannot be consistently separated, but they are better studied if rather sharply distinguished in discussion. It is also important that every teacher should be able at a given moment to determine which of these four aims he is seeking to achieve; knowing

[1] Moore: *What is Education*, 227.

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what his purpose is, he has a standard for measuring every means or device employed.

Essential conditions for effective recitation. Since the recitation is the central activity of the distinctive work of the teacher, conditions for its fullest success must be provided and maintained. For convenience of discussion essential requisites may be briefly analyzed into (1) knowing the subject, (2) knowing the pupil, (3) preserving proper external conditions, and (4) use of skill in the technique of teaching. Since the first three of these are discussed elsewhere, they will here receive only brief treatment concerning their direct relationship to class teaching, leaving the body of the chapter to the fourth.

1. *The teacher must know the subjects taught.* The greatest single handicap upon the usefulness of most teachers is their very limited knowledge of subject matter. Thousands teach United States history who have had only an eighth-grade course; they can hardly be expected to command respect for the subject or to give their pupils appreciation of the meaning of American democracy. Just as many are trying to teach geography who have never read geographical material more advanced than what is contained in the ordinary two-book series. Since no one can teach quite all he knows, such persons must teach textbooks rather than history or geography. They cannot communicate a point of view not possessed by themselves. But aside from the evident need of more adequate knowledge of the branches they teach, those who instruct must know specifically and with recency of acquaintance the material as presented in textbooks and helps in the hands of pupils.

Only by thorough daily preparation can a teacher meet this

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requirement. The one-book teacher should at least know thoroughly his one book; the teacher with wider preparation can utilize his store of material fully only by a planned study of the pupil's textbook line by line. Many a well-trained but overconfident young teacher has come to grief by trusting to a superior general knowledge which failed to explain embarrassing minor points treated in the pupil's elementary but too specific textbook. Merely understanding the content of textbooks is only a fraction of the purpose of daily preparation, but it may not be safely ignored. The confident bearing of the instructor who knows his field and what part of it his pupils have been able to explore, and feels reasonably sure of his ability to answer related questions, is a pledge of successful recitation work.

2. *The teacher must know the pupils.* *a. Why teachers find it difficult to understand pupils.* Adequate knowledge comes only with long and intimate association as well as careful attention to all that psychology and child study have to offer. One human being can know another only by analogy; we are often mistaken in reading into another's actions our own thoughts and feelings. "How does the teacher know the child he is teaching in the recitation?" Largely by thinking back in his own experience to the point at which he fancies he was in about the same stage of development as the boy who sits on the third seat of the fourth row. Such introspectively derived judgments are open to numerous objections. Teachers forget the mountainous aspect which forgotten difficulties once assumed; obviously women teachers are unable by such means to recall the attitudes of boyhood. Again the fact that the home environment and living standards of the social class from which teachers are principally selected dif-

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fer from those of many children in school causes the attitudes and standards of each to appear strange to the other. Even though chosen from exactly the same social or economic level, teachers are nevertheless a peculiar group, selected because of their intellectual interests which caused them to persevere in book or bookish work while their equally capable comrades chose pursuits more to their liking in other fields.

b. Expecting too much of pupils. Because of failure to know pupils thoroughly assumptions are made which prove exceedingly wasteful in teaching. Inexperienced teachers generally presuppose acquisitive ability and a store of knowledge entirely beyond what their pupils possess. "Every one knows that" and "I *always* knew that" are expressions characteristic of the teachers' attitudes regarding accomplishments which seem so evident, but which represent, nevertheless, a comparatively advanced stage of development. Knowledge of colors, discrimination of musical tones, appreciation of periods of time, or even the most familiar terms used to express time are later in developing than some teachers suppose. "When did you wash your face?" "Last summer," seriously replies the four-year-old who has a little-developed time sense, and there are many intellectual four-year-olds in classes which talk about dates "a hundred years ago," "in the last century," and "between 1812 and 1820." A natural result of not knowing pupils thoroughly is that beginners frequently teach "over their heads."

c. Presupposing adult emotions in children. Emotions and ideals being presupposed before they are developed lead to ludicrous answers to grown-up questions. Of this the joke columns of most periodicals furnish ample illustration. The

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accompanying is typical, showing distinctly the different level of pupil and teacher.

Wishing to reënforce her presentation of the fidelity of Daniel a Sunday school teacher secured a highly colored picture exhibiting a row of threatening lions ready to devour the prophet, a baby lion in the foreground with aspect as savage as the most terrible. A pupil burst into tears; the teacher, surprised but slightly gratified by the success of her impressive device, said, "Wasn't Daniel brave and good?" The tearful child upon whom the higher lesson was lost replied, "Maybe; but what I am afraid of is that the little lion won't get any of him."

d. Importance of immediate set or attitude. Not only must the teacher know the limits of capacities and interests, but the immediate attitude or connection which may be suggested by a statement or question. Every teacher of experience has elicited answers which were unexpected; most of the surprising situations of classroom instruction arise from the impossibility of knowing what is in the pupil's mind, how he will interpret new situations, or what meanings new words may have for him. If one endeavors to explain the following examples, he at once becomes conscious of the entirely natural and rational character of each unlooked-for answer when considered from the pupil's viewpoint.

(*a*) Wishing to show the growth of population in the District of Columbia a teacher said, "Children, in 1794 George Washington killed a deer in the District of Columbia; he couldn't do that now; why not?" "Because he's dead," answered a pupil irrefutably.

(*b*) "Algebraic symbols are used to denote unknown quantities," becomes "Algebraic symbols are what you use when you don't know what you're talking about."

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(*c*) "The blue heron has no tail to speak of" comes back "The blue heron has a tail which must not be talked about."

All such answers are seen to be inevitable and correct from the pupil's background; the meaning in the thought of the teacher is not the one possible for him since his total mental condition secures a different significance for the same words.

e. Fixed expectation according to grade the result of experience. As was remarked, beginning teachers are likely to instruct above the comprehension of their pupils. Teachers of experience are less prone to this mistake, but they frequently form somewhat rigid standards of what they expect pupils of a given age or grade to know, and fail to discover the exceptional case who is precocious or advanced in certain subjects. It is an unusual pupil who knows the multiplication table thoroughly when he enters the second grade, but the teacher who keeps such a pupil upon the abacus three months is not very wide awake. The same tendency to assume a given mental level upon which to teach is seen in the elementary teacher transferred to a high school position after many years of successful experience. Nothing less than unusual ability combined with vigilant determination to make one's teaching self over completely can insure success in the new position.

3. *External conditions necessary for the recitation. a. Effective seating.* External conditions must be right. In addition to those of general nature discussed in an earlier chapter a few are peculiarly close in their relation to the recitation. Effective arrangement of seating is one of these. If it is impossible to give those who recite together seats in the same section of the room, provision should at least be made to seat them in compact order while conducting the recitation. No

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one can do vital teaching if his scattered class is interspersed with pupils studying. Only by strenuous efforts can such pupils continue to study, and the teacher finds it hard to treat them as within the class but not of it. Even when properly grouped, it is difficult to give due attention to all; when the seating arrangement is straggling or irregular, some are sure to be neglected. In the many-graded one-room school the "recitation bench," though not always essential, is an economical expedient, since it groups the reciting class and removes from its midst those doing seat work, who study better because of this segregation.

b. Freedom from intrusions. A second external is that of taking precaution against unnecessary interruptions during recitation. Some one should formulate a teacher's maxim similar to "An Englishman's house is his castle," to emphasize the fact that the recitation must be free from intrusion — that class and teacher in recitation are in the holy of holies, which no disturbing foot should be allowed to profane. So seriously are interruptions viewed in some countries that fines are imposed upon those who enter or visit a classroom during instruction periods. Supervisors and other school officers are occasionally less careful than might be expected in this respect; returning to secure an overlooked book or pencil or to add a few suggestions to the teacher is not less distracting because of its being an official interruption. By far the most of such useless waste is that which teachers permit from the members of classes not reciting; in its most aggravated form, perhaps, this waste occurs in rural schools where recitation time is of necessity the shortest. Every such deflection of interest from the business in hand, if preventable, is a mark of inefficient precaution or control on the part of the teacher.

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Seldom is the question of a pupil not in the reciting group so urgent that it cannot await the close of the recitation period.

4. *Skill in the technique of teaching. a. Organization of subject matter.* (1) *Logical and psychological order.* Proper organization of subject matter is a prime requisite of effective teaching. In this connection so much has been written of the necessity of adopting the psychological rather than the logical order that some teachers seem to be half ashamed of a lesson plan which has systematic and consistent arrangement. In any choice between a logical and an illogical organization there can be no difficulty, for incoherent or wrongly arranged material causes present confusion and inconsistent mental action in the future.

What, in brief, do the terms " logical " and " psychological " mean? Logical means reasonable, the first being placed first, the most important receiving greatest emphasis, the whole being so arranged that elements of equal rank are coördinated; all must be systematically combined so as to permit no inconsistencies or contradictions, and expressed in words which have the same meaning to those who are using them.

Psychological order is simply that which meets the plane of the child's experience; it must conform to *his logic.* The normal child's mind acts logically enough; it experiences no difficulty in drawing conclusions which because of their unerring directness sometimes shock and at others amuse his elders. The child who says " runned " or " sinked " reasons consistently; so does the one who spells c-o-f-f or t-u-f-f because of o-f-f or m-u-f-f; and according to the child's sense-hungry appetite the hero who denies himself a good meal is incomparably greater than the one who rules his spirit in a moral crisis.

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So far as the child has the required experience his conclusions are the same as ours. For the pupil whose mind works inconsistently, inconstantly, — in other words illogically, — there is little hope; if experience only is lacking, the school can in time bring him to the plane of well-ordered thinking. Even the term "logical" proves itself a variable and indefinite goal; what is logical to an expert sometimes makes no appeal to the layman. The expert, on the other hand, may say of adult but unprofessional knowledge, "With his limited acquaintance in the field that doubtless seems logical," much as the wise teacher understands and respects the immature, inconsistent attitudes and expressions of pupils.

Thus it appears that psychological arrangement is not opposed to logical; it may be and very often is the same, and it is but occasionally that violence must be done to logical presentation in order to psychologize it. In organizing lesson material one of these ideas goes further than the other but does not contradict it. The maker of a good textbook may approximate the normal child's logical order in his treatment; the teacher must reorganize to meet the needs of a class or pupil. Only the psychological can be taught, but this is a variable which approaches that other variable "logical" with which most teachers are better but not too well acquainted.

(2) *Inductive development.* (*a*) *Nature of inductive exercises.* The most widely applicable method of organizing subject matter is known as development or the development lesson. Formal and inadequate comprehension of the Herbartian steps of development has led to confusion and disgust, even with regard to what has real value in the method. The principal cause of misunderstanding may be indicated in

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the difference between the terms "development" and "development lesson." The latter suggests an exercise limited to a single class period; the former indicates a process which may be progressive and continued, reaching its goal within a few minutes or requiring hours or weeks. The measure of development is not an interval of time, but the accomplishment of a unit of subject matter, sometimes called a "method whole"; it is a unit of thought ending in a generalization or conclusion and its application. A second cause of confusion is the attempt to separate the steps of the process too sharply from each other, as if sequentially related in time. Teaching and learning are too complicated to yield themselves to such analysis unless the student realizes that what he is dissecting is different from the result of combining the parts which his study finds distinctly revealed. With these cautions kept in mind while reading the following paragraphs the steps of inductive development should not be misunderstood.

(*b*) *Steps of development.* Inductive development lessons include five steps: preparation, presentation, comparison, generalization, application. The fourth step, generalization, represents the goal of instruction in an inductive lesson; this may be a principle, rule, concept, or process which it is the purpose of the lesson to develop. The teacher must know clearly what this generalization is to be before the aim of the lesson can be formulated; granting this knowledge, which the teacher may propose as some form of problem, either during or after the first step, the essential stages may be outlined in the following manner:

Preparation. This includes all data which bear upon what is to be presented; it may involve experience extending over

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years as well as the small amount of material consciously revived by the teacher.

Presentation. The particulars of new experience are given; telling or reading of facts previously unknown, a new process or demonstration.

Comparison brings out essentials and general relations from what is previously known and what has been presented in the second step. Evidently this step begins simultaneously with the preceding and is quite inseparable from it and from the one which follows.

Generalization. As previously stated, this is the goal at which inductive development aims; the meaning, attitude, concept, law, principle, definition, or process determines all the teacher's procedure which is to lead to it; once formed, it is used in interpreting all succeeding experience, which thus makes it the beginning of deductive activity. For example, as soon as a pupil has formed the general notion of " triangle " he says of certain figures, " These are triangular or triangles "; when he has acquired the law of the road, he turns to the right.

Application. This step consists in using the newly formulated generalization. It extends indefinitely into the future, but begins with application exercises given by the teacher, such as parsing, or arithmetic examples involving no new principles.

Only occasionally can the teacher be clearly conscious of the inductive process in arriving at generalizations. In writing a lesson plan the steps are often best left undifferentiated except that the generalization (aim) must be clearly stated with the recognition that the entire movement is directed toward its realization. In the accompanying outline of a development lesson all steps are mentioned with suggestions

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concerning the kind of procedure which would characterize each step. In practice the teacher would probably omit writing out the first step, though of course use the experiences there indicated. Likewise the third step would probably be taken with the presentation.

Preparation — all previous number experience, especially short division.

Presentation — several simple typical examples in long division solved by teacher and class, *e.g.* $2321 \div 21 =$

$624 \div 24 =$

$255 \div 15 =$

Comparison — examination during the preceding solutions of what was done and reasons for each step, discovery of relationships, and operations common to each case. *E.g.* How was the first quotient figure found? What was the next step after multiplication?

Generalization — in this case the process itself is the generalization; memorizing a rule for long division would be nonsense, but after the work has been carefully examined in the presentation and comparison and the fact brought out that the steps of division, multiplication, subtraction, and annexing the next dividend figure follow each other in unvarying succession, this part of the generalization may with good economy be learned as a sequence — divide, multiply, subtract, annex.

Application — many practice exercises to fix the process; examples and problems involving use of long division.

(*c*) *Suggestions for writing a lesson plan.* 1. Determine what generalization is to be the result of the lesson. This makes clear the aim which must be *clearly* in the mind of the teacher.

2. With this in view survey the pupil's experience to determine what relevant material in his possession must be used to understand the new lesson. Provision should be made to revive any of this which may have been forgotten.

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3. Make a brief outline of the subject.

4. Think of the form in which pupils will acquire each main point.

5. Formulate pivotal questions to "bring" these important answers. (Discussed under "Questioning.")

6. Since pupils are unlikely to make exactly the expected response, think of other answers they may give and of misunderstandings likely to ensue; make plans by means of skillful telling and minor questions to lead from incomplete or inaccurate understandings to correct statements.

7. Summarize important points. This may be required several times. Each summary may be an important generalization, or a final summary may include all the preceding.

8. Provide for application of what has been learned.

In planning many lessons not all of these directions can be followed; those from the third to the seventh can usually be employed.

(3) *The deductive lesson.* The deductive method is a means of interpreting experience through the generalizations found by induction. As stated for teachers planning lessons it consists of four parts:

(*a*) The generalizations of preceding experiences.

(*b*) A new situation or problem, including such data bearing upon it as may be assembled.

(*c*) Inference.

(*d*) Verification.

In all school exercises in which classifications are made by means of definitions or other general notions, deduction is employed. "Select the complex sentences in lesson three," "Parse the nouns," "Write all the prime numbers," are exercises in deductive reasoning. In each case the pupil

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starts with a concept or definition; using this he classifies each case, at first on trial; then by means of other general notions verifies to his own satisfaction the classification he has made. In the accompanying case the steps of a deductive solution may be readily perceived.

Factor $x^2 + 6x - 16$.

(*i*) Generalizations already familiar.
Idea of binomial factors of a perfect square, *e.g.* $(x+y)(x+y)$.
Idea of binomial factors of quantity not a perfect square, *e.g.* $(x+a)(x+b)$.
Idea of monomial factor of a quantity, *e.g.* $x(x+y)$.

(*ii*) The problem — factor $x^2 + 6x - 16$.

(*iii*) Inference — applying generalizations until correct one is found. The idea of monomial factor would soon be given up if considered at all; since the first and third terms are perfect squares, a beginner might try $(x-4)(x-4)$. When this inference failed, either $(x-8)(x-2)$ or $(x-8)(x+2)$ might still be tried because of some ill-defined influence of the minus sign before the 16, or the correct solution might be found, $(x-2)(x+8)$.

(*iv*) Verification. Prove by multiplying them together that $(x-2)(x+8)$ are the factors sought. It is easy to observe that each incorrect inference was checked by an attempt at verifying it, the third and fourth steps being thus practically inseparable.

b. Use of means appropriate to the type of lesson. Considering their aims, most recitation exercises can be reduced to one of the four types mentioned at the beginning of this chapter. Appropriate measures for making each of these effective will next be discussed. It may be repeated that lessons exclusively of any single type are seldom found; test-

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ing, instruction, drill, and appreciation are inseparably interwoven, but at any moment the teacher should know which of these is dominant.

(1) *Testing.* Testing is primarily directed toward securing information concerning the success and thoroughness of the pupil's preparation; it should not stop with this, but should also be regarded by the teacher as a means of discovering the value of methods used in presentation. It has been insisted that teachers usually spend too much time in the testing phase of the recitation, but it cannot be omitted; testing should be done more economically but not less thoroughly.

(*i*) *Inadequate means used in testing should not supersede questioning.* "How many understand the lesson?" is not a satisfactory testing device for all occasions. Those most in doubt may be reluctant to confess; the pupil's standard of understanding may be neither intelligent nor exacting. "How many solved all the problems?" or "Who had any trouble with the lesson?" are likewise formal or indefinite; the veriest loafer who has not given his lesson a thought can blandly assert that the lesson has caused him no trouble. Depending entirely upon papers handed in to determine a pupil's standing is uncertain procedure since the work may have been done by parents. Sending a class of pupils to the blackboard to test all by the same exercise is also unsatisfactory, as a considerable per cent will intentionally or half accidentally copy their neighbors' work. Though all of these devices have value, nothing should be allowed to supplant keen and carefully planned questioning which for most phases of school work is the most effective means of testing in the recitation.

(*ii*) *Testing reflects upon the teacher's work.* Inquiry concerning reasons for failure to make preparation is sometimes

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as necessary as testing the preparation itself. The half-delighted expression of countenance which says, "There, I caught you; I didn't expect you to know that lesson," or the vengeful, "Take the same lesson again," are petulant and superficial ways of avoiding the real difficulty. The reason why the lesson has not been taken seriously may point accusingly to the teacher's assignment or manner and suggest changes which will insure better work in the future; it may reveal wasteful study procedure which the teacher could improve.

(2) *Instructing.* Instruction has for its purpose presenting new knowledge or experience. It requires the use of all methods; no matter how much good material is found in textbooks it will need to be supplemented and reorganized; wrong impressions develop, and these the recitation must correct. In accomplishing its many-sided purpose instruction chiefly uses questions and answers, topics, telling or lecturing, and the written lesson. The first of these is so important in lessons of all kinds that it will be given additional treatment in a section of its own. (See Questioning.)

(*i*) *Question and answer instruction.* The question and answer mode of instruction as usually conducted is open to the objection that it breaks subject matter into small, disjointed bits with little sequence or organization. The exclusive use of the method lends itself very easily to this defect, but careful planning to insure development of important generalizations and emphasis of essential points may obviate the difficulty. Teachers who depend upon the inspiration of a class situation to formulate questions are unlikely to preserve an ordered sequence; few are clear enough in their own thinking to be sure of themselves, and the force of digressive

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interest is usually sufficient to wreck any preconcerted serial arrangement of questions unless they rest upon a fundamental knowledge of subject matter in all its relations.

Without this acquaintance with what is being presented, question sequences written in lesson plans and memorized break down; added to such careful preparation, they are a fine guide for the beginning teacher. Without planned questioning the teacher with the most thorough knowledge is likely to leave pupils' acquaintance with subject matter formless and void, though of course no one can follow a rigid sequence of pre-formed questions.

(*ii*) *The topical method.* The topical method, by which instruction proceeds through a series of related topics which are part of an outline, depends for its continuity upon the care with which the outline itself has been organized. Lacking the too momentary impelling force of the question-and-answer plan, it depends for motivation more upon the skill with which the individual topics are selected and the wording given them. If erratic or capricious in arrangement, such a recitation differs chiefly from the ordinary quiz in the length of topics and lack of interest; if well selected and framed, this method is an excellent device to secure sustained effort. Its use can profitably be increased with progress through the grades.

The topical method lends itself to peculiar abuses. Individual assignment of bits of subject matter (which all should learn if pupils are to have more than fragmentary comprehension of what is taught) has been mentioned as a weakness of teachers unable to secure preparation by other means. Another form of poor economy often associated with the use of the blackboard is to apportion to each pupil a topic from the

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lesson he has prepared, asking him to write all he knows about it. With abundant time this, as an occasional device, has great value; too often it happens, especially in rural schools, that the writing consumes so much time as to leave none for discussion and correction of what has been written. Many pupils hear day after day, "That will do; erase," when the teacher has hardly if at all looked at their work. In cases of short-class periods, pupils should be started upon the written work of their topics before the recitation proper begins; the class discussion of what has been written is surely worth more than the writing itself.

(*iii*) *The telling method.* The telling method, called lecturing when used with mature students, is of great value in all grades of instruction. Usually this method is combined with questions and answers, the teacher supplementing the contributions of pupils and adding material which they could not otherwise acquire; it is certainly superior teaching economy to tell pupils outright rather than to waste time in guessing exercises based upon material which cannot be developed out of ignorance. Because of the tendency of nearly all instructors to talk too much a great deal has been said against this mode of presentation. Long lectures are of course out of place in teaching children, but one exceedingly valuable endowment of any teacher is ability to talk well in explanation or in exposition and illustration. A teacher who is slow of speech or an uninteresting talker is handicapped; he should impose upon himself the task of acquiring movement, force, directness, and pleasing manner, at least in all class work. He should regard no lesson as adequately prepared until every probable needed explanation can be given promptly in clear and correct English,

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without hesitation or confusion, and spoken so well that pupils willingly listen.

To accomplish this, it may be necessary to rehearse some of these lesson speeches several times as if to the class. If the recitation period is to be thirty minutes in length, the teacher should be prepared to speak well upon the subject of the lesson during thirty minutes — and then of course talk very much less. While pupils should occupy a large part of the time, this should be for their own development and not merely because the teacher has nothing to say, which apparently is the reason for forcing pupils to contribute to some recitations. Such lesson rehearsal as has been suggested is quickly productive of results; lesson preparation soon requires less time and the increased readiness and clearness in the recitation period change its entire atmosphere and tone.

(*iv*) *The written lesson.* The written lesson, not necessarily a test or examination, in which most of the work is conducted in writing instead of orally, has the distinct merit of giving all an opportunity for independent expression which is often impossible in any other way, when classes are large. Another advantage is the fact that it provides opportunity for *careful* expression. While oral recitation should predominate, few can organize their thoughts and select their words while speaking in the finished way which is possible even in a first writing; occasional practice in putting down thoughts in this more deliberate way and seeing how they look after being written is needed by every pupil. This value of written work is usually lost in tests and examinations because of the stress of the occasion. Now and then a pupil is found who has almost no power of oral expression; the written lesson serves his needs and must be used to develop his oral ability

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whenever this is possible. One who cannot talk but can read aloud what he has written should be given this opportunity.

The written lesson naturally is entitled to greater prominence in some subjects than in others. In arithmetic and composition, oral and written elements are closely associated; in some schools the announcement of written work in most other subjects brings the tenseness of an examination situation. Pupils should be so accustomed to occasional written work upon the day's assignment that they will not regard written lessons so much a means of testing as opportunity for expression.

(3) *Drill.* (*i*) *Purpose of drill is to secure the economy of habit.* The purpose of drill is to train, to memorize, to form habits, to render automatic certain actions the need of which recurs. When an activity has been reduced to habit it no longer requires intelligence, thinking, or voluntary attention. The purpose of habit is to render voluntary effort unnecessary in a multitude of relations, thus freeing the mind for situations which cannot become habitual. The more of the details of our daily life we can hand over to the "effortless custody of automatism," the more our powers are set free for other work. Furthermore, habit insures efficiency since it guarantees a perfectly accurate response instead of the awkward, blundering one which characterizes activities guided by thought. We think while uncertainly pioneering; the road once learned, the steadiness of habit serves the purpose better.

(*ii*) *The teacher by drill reduces selected activities to the plane of habit.* Clearly a line should be drawn between what should and what should not be made automatic. If a person were compelled to think about such matters as walking or the motions required to bring food to the mouth, there would

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be little time left for anything else; on the other hand, one who tells the same story or makes the same remark through habit is not an interesting conversationalist. Occasionally the school has been accused of so much system, lock step, mechanism, and drill that the routine enters the very soul of the pupil. Now and then an original or ingenious character is met who is very thankful that he never attended the elementary school a great deal and so escaped becoming a thoughtless and uninteresting plodder. It would be unfortunate for a pupil's training to result in a series of habit systems without stimulating initiative or the higher mental processes which give guidance and worth to all.

It may be suggested, however, that the valuable qualities of initiative which the school may infrequently discourage would not be developed by having the pupil remain at home; that such qualities are more often than not of no social value or of anti-social significance, and that original nature endows only a small per cent of children with superior attributes of really valuable originality. It may be doubted whether the school causes pupils to be overmechanical in their thinking; it has not been proved that thorough drill resulting in automatized activity where thinking is unnecessary causes transfer of this routine to the fields in which judgment is needed. Perhaps more loss has resulted from engrossment with petty details which would not occupy attention if drill had been more thorough.

The problem of the teacher is to select those activities which should be made habits and then by intelligent, economical, persistent drill secure the habitual reactions. Little effort is required to name a long list of situations calling for automatism. It is wasteful to *think* about the spelling of

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ordinary words and often quite useless, for who by taking thought can master English spelling? It is not even essential that one shall *know* the spelling of a very large vocabulary; it is vastly important that he shall *do* a great amount of repeated spelling of everyday words without being conscious of their spelling at all. Facility, celerity, and accuracy in number operations is never possible until the response to symbol combinations is prompt, unconscious, and inevitable; to expend much thinking in addition is not alone wasteful but dangerous, since it makes occasion for errors. Similarly punctuation, capitalization, syllabication at the end of a line, inflection, modulation, and emphasis in oral reading, as well as most of what is called "manners," should become habit.

The necessity of insuring unvarying reactions in habit situations is well shown in case of fire drills; success here depends upon the strength of the bonds uniting the system of habits which constitute the means of escape from the building in the presence of distracting elements. The fact that politeness does not come as the result of studying etiquette manuals demonstrates the same necessity; "book manners" may serve in calm situations, but in unguarded moments, or the stress of emergencies, only that which has become second nature may be depended upon. "Punctuation has never been mastered until its rules are forgotten." "The rule says a period should be placed at the end of the sentence" is not the ideal aimed at by effective drill, which should render the habit unconscious and unvariable when the habit situation presents itself.

(*iii*) *Suggestions for drill based upon the psychology of habit.* To yield results drill must be based upon the psychology of

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habit. The law for habit formation has been briefly stated as "focalization of attention plus attentive repetition." Elaborating this very brief statement by explaining it in relation to the drill phases of classroom work is the purpose of the following discussion.

Focalization of consciousness upon what must become habit is the first step. This involves clear comprehension of what is to be made habitual, and motive for effort. Clear comprehension requires that the pupil shall have unmistakably in mind the process or activity which he is acquiring; it is best to understand the reason for punctuation or to comprehend the poem to be memorized, or the process in arithmetic, though *reasons* for the process may not always be given. Motive for practice is at its best when the pupil feels direct need of the activity which has been isolated for drill; he most willingly attends to what is seen to be worth while.

Repeat with attention upon the element being automatized. Repetition with attention is the second essential of drill. Strictly speaking, repetition without attention is hardly possible, but the mind may be centered upon some other than the element selected for memorizing or making automatic. The teacher who requires a pupil to copy a word ten times in order to fix its correct spelling cannot be sure that attention is primarily upon letter sequence, sound of the word, or syllabication; it may be upon a peculiar flourish which is given to the penmanship. The pupil who is required to pronounce a word repeatedly to establish correct pronunciation may have his attention fixed upon the teacher through fear to such an extent that his repetitions are vain. It is a matter of common observation that many who take part in congregational singing are unable after a hundred repetitions to

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recall either words or tune. Concert repetition affords much opportunity for repeating with the minimum of attention. A good way of testing concert work is to restrict participation to the half or third of the group most in need of drill. What has been a vigorous chorus often becomes a hesitating solo or duet.

The keenest interest palls unless its object is changed or presented in a new manner. Especially destructive of interest in drill practice is a uniform method pursued day after day throughout the term. It is teachers who have not resourcefulness to vary their methods that give school life the dreary aspect which it evidently presents to many children. Variety is the spice of drill work. Fifteen minutes spent upon addition practice achieves more if it includes oral and written work, flash cards, and a contest than if all the time is occupied with a single plan. Nor must devices be worn threadbare by long-continued daily use. A few suggestions for holding attention to practice repetition are given; every drill subject offers its own special field for variant devices which teachers must be alert to discover.

Fix time limits; see how many examples can be solved or words learned in ten minutes; use group competition in spelling matches and ciphering contests. An alert interest and coöperation on the part of the teacher put zest into drill exercise; this is shown in the case of the teacher who makes up drill examples and solves them while the class is at work, instead of depending upon book answers already worked out. Plays and games, in which drill is subordinated to the ends of the game and every device or problem that utilizes the element which is being reduced to habit, result in more vitalized drill and insure attention. And of course, since effective

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drill represents vigorous effort, — is "hard work," — drill periods should never be very long.

Practice only correct models. Practice should invariably be upon correct models. Errors are fixed as quickly by attentive repetition as are correct forms; a tendency to do the wrong thing results from doing it; when situations recur similar to the one which failed to bring the right response, there is always the possibility of "taking the wrong road." The habit of not being sure of the spelling of certain words is an illustration; such words are often those which have been spelled incorrectly a few times. The pupil who imitates the ungrammatical speech of an ignorant or silly person finds these oft-uttered expressions coming back at unexpected moments. The teacher who pronounces to a class long lists of spelling words before sufficient opportunity for study has been given may be helping to deepen wrong impressions for all who write words incorrectly. If crowded for time, it is far wiser to complete a small part of the drill practice correctly than to cover the whole inaccurately.

Every element to be made habitual must be given practice. Every element, to be mastered, must be given practice. This follows because of the specific nature of habit. No one expects to learn to add by repeating the words of a spelling lesson, but many teachers ignore specific relations in expecting practice to result in general improvement. "Practice pronouncing your words more plainly" or "Improve your writing" are common examples of too general study directions. It is specific words and letters which need practice, and those most needing improvement are likely to receive as little repetition as those not in need of attention when such directions are given to the pupil. When practicing addition, it

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should be recognized that improvement in adding one combination gives no assurance of increased ability in the use of others. Thus repeating $7+8=15$ has no bearing upon $9+5=14$ and very little upon $27+8=35$.

The more difficult elements require the most practice. Most effort and the greatest number of repetitions should be upon elements presenting special difficulty. Examples familiar to primary teachers are 9×7, 7×8, and 9×8, and a considerable list of words which tend to be mispronounced or misspelled by most pupils. In all such cases the troublesome element should be isolated, special attention directed to any peculiarities it may possess, and increased repetition provided.

Appeal through several senses rather than one. Drill is rendered more effective if appeal is made through more than one sense. To illustrate: if a word is written repeatedly as well as spelled aloud, probability of its retention is increased through utilization of visual, auditory, and motor impressions.

Provide for repetition at gradually increased intervals. After the plane of habit has been attained opportunity for occasional repetition should be given at intervals which may be gradually lengthened. If twenty repetitions are sufficient to insure automatism, two or three the following day and one daily for some time thereafter should result in fixing the habit or insuring recall. Repeating at intervals is cared for in some school subjects by recurring needs of the classroom, as in the case of elementary combinations or the multiplication tables. In other fields economical procedure requires that the teacher shall make provision for such distributed repetition. This is true with poetry or quotations which it is desirable the pupil shall remember for a life time; require such selections to be well memorized; a week later call for them

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again and repeat this procedure a few more times during the school year.

(4) *Appreciation and enjoyment.* An important purpose of teaching is to develop the ability to appreciate and enjoy what is most worth while. If from all recitations one subtracts that which can properly be called testing, instructing, or drill, there still remains the ill-defined purpose of "getting pupils to like" certain things — to care for good reading, to be fond of good music, pictures, or beautiful landscapes. This is peculiarly true of literature as opposed to composition, of art contrasted with drawing, of music rather than scale reading. The undefinable values of these subjects elude all ordinary tests; photographing a group of children enjoying a poem gives no index of character effects. Instruction is powerless to develop, and drill sometimes destructive of these finer values. Analysis of set lessons for appreciation yields meager results, but a few suggestions may be confidently made.

(*i*) *Enthusiasm of teacher more effective than direct suggestion.* The teacher must like what he plans to cause pupils to care for. "It is a rule of the school that you must enjoy this" is but a degree worse than "I ask you to like this," or "This is admired by all who know," for the latter lead to hypocrisy. "Isn't this fine!" and similar suggestions designed to push pupils directly into an expression of admiration may elicit the desired response, but this should be rated as acquiescence with the teacher rather than genuine appreciation. Repeating the moral pointed at by the *haec fabula docet* of a hundred years ago hardly proved that the pupil appreciated the moral. Honest admiration by the teacher is more effective in begetting appreciation than is direct suggestion.

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(*ii*) *Preparation in harmony with aim of appreciation.* Though it is not practicable to mark off an appreciation exercise into definite steps, it is desirable to make sure that preparation is adequate, and in harmony with the appreciating aim. Devotional exercises which begin with or are preceded by sharp reprovals or scolding; telling pupils that the author of a beautiful poem about to be enjoyed was a disagreeable man whom no one liked; prefacing a lesson on kindness to animals by allusions to mad dogs or English sparrows as pests are examples of wrong preparation; so is exhaustive analysis of a literary selection whose reading should be a delightful experience.

(*iii*) *Utilizing incidental opportunities to develop appreciation.* The alert teacher is as ready to modify regular routine, so that he may take advantage of events which have stirred emotions, as to avoid mistakes like those mentioned. An exciting election affords opportunity for appreciation of our institutions and the importance of sterling character in the men elected to office; a community song festival or a musical number of a lecture course contributes to the psychological moment for music appreciation.

(*iv*) *Immediate expression of emotion not demanded.* The aim in developing appreciation may be realized even though there is no recognition upon the part of pupils; in fact it is wise to be satisfied without attempting to secure expression of emotion. Many pupils hate to acknowledge a liking for what is admittedly fine or high class. A suitable story or poem read with force and expression, a fine ideal presented through a biography of consuming interest, an artist's masterpiece commented upon only enough to direct attention to its meaning and then left by daily contact to find its way into

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the hearts of pupils are examples of ways in which appreciation may be secured. Poor performance of any kind is the surest way to prevent appreciation by school boys and girls, who, without knowing it, admire efficiency. Skillful, impressive, and artistic presentation of the finest and best may be depended upon to register the right effects upon what pupils genuinely care for.

c. Skill in questioning. (1) *School questions a technical instrument.* If a single aspect of teachers' technical fitness for classroom work were selected as the best standard for judging efficiency, ability in questioning might well be named. It should be noted at the outset that the teacher's question is a professional tool, quite different in purpose from inquiries usually made outside of school. If the reader lists the next twenty questions he hears at home or on the playground, all will probably be requests for information. Occasionally a rhetorical question is heard in the nature of a strong affirmation, as in, " Shall not the Judge of all the earth do right? " Now and then one is employed to justify a course of conduct, as, " What would *you* have done? " implying that what has been done was inevitable. All such minor purposes, affirming, justifying, confuting, or mystifying, the teacher's questions may serve, but the great purpose of ordinary questions is almost entirely foreign to that of the school question used by the teacher.

The teacher knows the answer to most of his questions before they are asked. He asks to test, clarify, correct wrong notions, or emphasize important ideas, but not for the sake of securing information of direct value to himself. If the teacher asks the janitor how to regulate the temperature of the room, he is primarily interested in acquiring this bit of

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knowledge and but little concerned with the fact that the janitor speaks ungrammatically, makes little use of this opportunity for self-expression, or has encountered difficulties in learning to manage the heating system. If a pupil is asked to explain how he solved a problem, the teacher is not in need of the solution, which he is quite able to perform without the pupil's assistance, but is greatly concerned with modes of expression, and is constantly questioning to discover what has proved difficult and perhaps is not yet understood. If a pedestrian asks which road to take, he cares little how the one interrogated came by the information, but the teacher questioning upon a problem is quite as much intent upon how the pupil arrived at the solution as upon testing his attainment. Since the teacher's question is distinctly a teaching device, it should be studied as such in this discussion.

(2) *Classifications of questions.* (*a*) *Fact and thought questions.* Fact questions call for answers which to a large extent depend upon memory; such are most of those which begin with *what*, *when*, *where*, and sometimes in mathematical relations, *how much* or *how many*. Thought questions require answers which are the product of judgment or reason; *why* and *how* are the initial words of many of these. It should not be assumed that these words or any others are infallible guides in determining the character of questions since it is quite possible for pupils to memorize reasons as well as facts, or, more strictly, such memorized reasons become facts accepted without reasoning. The pupil who answers a *why* question by saying that "two books and a newspaper said so" is reasoning more truly perhaps than others who in parrot fashion recite a book series of reasons. To the question, "*Why* did America declare war in 1812?" the answer, "Because Eng-

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land insisted upon the right of search, impressed seamen, and wrecked our commerce " may represent thought or it may be mere reproduction of the words of a textbook. Fact questions are legitimate tools, but most teachers employ too many of them; *what* and *when* are grievously overworked words in the repertoire of most teachers' questions.

For many instructors it might be enlightening to resolve to abstain from the use of these words of interrogation during one school day; it is not probable that the resolution would be carried out, but it might result in an effort to frame thought questions so that a knowledge of facts would be required in making the answer. This would have the double advantage of reducing the number of questions and improving the continuity of answers.

(*b*) *Pivotal, developing, and sequential questions.* The *pivotal* question is one which in its answer calls for the central or important idea of a unit of subject matter. If a sufficient number of these are carefully elaborated in the lesson plan and skillfully used, teaching may be excellent in spite of minor mistakes or formal incorrectness. Complete answers to the half dozen pivotal questions around which a lesson may be organized are seldom possible without the use of supplementary discussion and developing questions.

A *developing* question leads to an understanding of relationships through subject matter already comprehended. A series of these is often required to elicit the answer to pivotal questions. Essential to all good teaching, greatest skill is requisite in using the " development method " to prevent certain characteristic wastes. In the first place not all can be thus drawn out; the teacher who endeavors to develop all from pupils' previous experience without " telling " anything

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directly is sure to lose time in interrogatory excursions which can only by chance lead to the expected answer. Idle guessing upon the part of pupils is another phenomenon present when development has run aground and needs direct telling to get off the shoals so as to continue its voyage. The teacher should recognize that it is often impossible and even more frequently uneconomical to use this method, but an important part of planning a lesson is the formulation of development questions. The pert pupil who said to an awkward beginning teacher, "I know what you want but your question won't bring it," was expressing what many pupils would feel if they were gifted with sufficient insight to discover what is wrong with their teacher's questions. All are amused by lists of incorrect answers, some of which are silly enough, but if pupils answered strictly the questions asked, results would still afford sufficient scope for merriment. Until a teacher has acquired skill in presentation every development question should be made out beforehand with the answer it is expected to elicit clearly in mind. "Will the question bring it?" If not, it should be recast until it will.

Sequential questions are those which fit logically into the development of the subject being presented. This may not mean the logic of the grown-up; it may mean the psychological order, logical to the pupil, discussed earlier in the chapter. If a question seems to have no appropriate place in the series, if it could as well be asked in one place as in another, there is some reason to doubt whether it should be asked at all. One of the most helpful things a teacher who is ambitious for self-improvement can do is to arrange pivotal questions upon a lesson to be taught with the minor questions which will probably be needed in developing the subject

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and determining exactly the place each should occupy in ideal sequence. This ideal arrangement will probably not be followed in the classroom, but persistence in making such plans will surely eliminate the confused and inconsequential teaching which so commonly puzzles the minds of straight-thinking children and of course does nothing to improve the consistency of minds less clear.

(*c*) *Types of objectionable questions.* The foregoing classifications of questions include those which characterize good teaching; several other types are conceded to be objectionable. Direct, leading, alternating, and elliptical questions are among these.

The *direct* question calls for a "yes" or "no" answer. It is a poor teaching instrument because it may be answered without thought or knowledge of facts; it requires the teacher, already in danger of talking too much, to use a sentence or more in securing a nearly worthless monosyllabic response from a pupil who is usually a too silent partner in the recitation. Pupils have a well-marked tendency to say "yes" rather than "no" in answering such questions, but the teacher's manner or inflection often hints the preferred response, thus taking away all need of mental effort on their part.

The *leading* question indicates the answer unmistakably as "Alfred was a good king, wasn't he?" Many questions direct in form are essentially leading. "Was Alfred a good King?" usually leads to the answer "Yes," both because of the natural tendency to give an affirmative response and because, in spite of a few experiences to the contrary, the pupil is loath to believe that the teacher is trying to make a fool of him with a trick question.

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The *alternating* question limits the answer to one of two possibilities, as, " Which is more important, the army or the navy? " When followed by " Why? " or in some other way given a form which requires thinking, an alternating or direct question is rescued from being a symptom of weak teaching; otherwise the alternating question is little better than the others just noted. Incompetent teachers sometimes employ all of these poor forms in eliciting an unimportant answer. As an illustration which grows in intensity because of its brevity the following sequence serves:

I. Which is the largest of the continents?
(No answer.)

II. Is it Asia or Africa? (Alternating)
(I don't know.)

III. Is it Asia? (Direct)
(I don't know.)

IV. It's Asia, isn't it? (Leading)

The third or fourth of these can hardly fail to secure the answer.

The *elliptical* question is in the form of a statement with important terms omitted; its principal shortcomings are the same as those noted in the preceding forms, — the teacher is made to talk too much and the pupils do very little. These defects are glaringly evident in the following examples of actual classroom work:

"He would have to live in the state a certain length of time before he could? (Vote), and then after he has had a chance to study our laws and customs and all, he is supposed to know whether this is against the law or? (Not)."

(Elliptical pauses made with a strong rising inflection.)

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"The Indians fired a volley at the English and then took to their? (Heels)."

(3) *Suggestions upon questioning.* (*a*) *Questions should be clear* in language and expression, — this means clear to the pupil, for what is quite clear in the mind of the teacher may have a very different significance to him. Mere obscurity of pronunciation may be responsible for what seem at first wholly unaccountable as well as exceedingly amusing answers. *E.g.*

1. "What is the relation of the *motion* of the earth to climate?" "Climate is caused by the *emotion* of the earth."
2. "What was done to Achilles to render him *immortal?*" "He was dipped in the river Styx to render him *immoral.*"
3. "Give an example of a limited *monarchy.*" "The government of England is a limited *mockery.*"

(*b*) *Questions should be definite.* A wretchedly indefinite but commonly used form is of this model: "What about wild crab apples?" To this the pupil may properly reply that they are sour, or green, or cheap, or useful; that they grow in the woods or that he dislikes them. Any answer satisfies the question and should be accepted by a teacher who asks such questions. "Tell me about" and "Make a few statements about" are often little better. Placing a situation for which a solution must be devised, limiting the field by specifying conditions of which the answer must take account, or calling for a definite number of points or cases are effective means of giving a question definiteness.

(*c*) *Questions should not be framed too closely in the language of the textbook* and should certainly not be read from the book. If the teacher uses this catechetical method, he should

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at least be as fair to his pupils as were his predecessors of the middle ages in seeing that each child has his responses specifically written out. A fairly safe rule to which there are exceptions is that in content subjects the pupil has the right to use the textbook whenever the teacher depends upon his. If the teacher must read his questions, why not the pupil his answers?

(*d*) *Questions should be distributed according to the needs of the class.* This does not mean equally to all, since both questions and needs vary. Some pupils insistently hold up their hands or by eager and intelligent expression invite notice and secure undue share of the teacher's attention, a few monopolizing the class period if the teacher permits this condition. Furthermore the answers of these eager pupils are likely to be clear, distinct, correct, and so given as to prove of interest to the class. Others never volunteer to answer, attract no attention by their expression, and destroy interest of the whole class by their indistinct, hesitating, and finally incorrect answers. What should be the teacher's policy in this very typical schoolroom situation?

Some make sure that no one is omitted by consecutive questioning, beginning at one end of the class or proceeding through the class roll. This plan is satisfactory when every pupil is held to the lesson by a tense interest, which is seldom the condition long at a time; for the sake of stimulating attention, if for no other reason, most alert teachers use a promiscuous order in their questions. The device of a fixed order or of saying, "Next," "Next," "Next," seems economical, but it is too often a symptom of lazy, humdrum class work with a minimum of attention.

Other teachers, inspired by a spirit of impartiality, ask

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even the most hopeless a just share of questions, but quickly save class interest by answering their own questions, the result being something like a monologue by the teacher. Still another teacher, failing to secure a fully articulate response, repeats the correct answer for the benefit of the class. All these expedients might more often be commendable were it not for the fact that answering one's own questions and repeating pupils' answers are likely to grow into teaching habits. Furthermore none of these achieves the important purpose of causing backward children to express themselves coherently and fully. Pupils most able to take prominent place in the recitation exact from the teacher no great degree of questioning skill; the measure of instructional ability is more often success in bringing out those who seem timid and need their own capacities revealed to themselves.

(*e*) *Questions should be asked with an attitude of confidence* in the pupil's ability to answer. The teacher, sure of his ground and fully aware of what he is going to say, as well as reasonably acquainted with all of what pupils are likely to contribute, is apt to forget the tense and sometimes fearful anticipation with which many pupils await a question filled with destiny. "What if I couldn't answer!" "What if I should forget!" "What if he should ask me *that!*" are anxious silent voicings of trepidation familiar to all but a few hardy spirits or those who are stolidly unconcerned. Make a row of interrogation marks and opposite each place an exclamation point; this perhaps represents graphically the mental state of every questioned pupil until he recovers, as it were, his mental breath and is ready to recite. Now if this already tense situation is rendered distressing by undue haste or an attitude upon the part of the teacher which plainly says,

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"I don't expect you to know," or "I saw you idling and so of course *you* can't," or even worse, "I'll try you, but it is unlikely that *you* know, for you never do," the pupil seldom does his best, and his attitude varies all the way from panic to lingering resentment of the insult. There is little place for the cynical or challenging manner in teaching; confidence in questioning begets successful answers.

(*f*) *Number of questions should be reduced.* A studied reduction in the number of questions would usually result in better class work. It has been found that in content subjects, such as history or geography, many successful teachers ask an average of two or three questions a minute and others as many as four or five. Presumably each of these elicits some kind of response. This means a very great number of short questions and shorter answers in a class period of twenty or thirty minutes. In fact, examination of stenographic reports of many recitations shows that teachers do nearly all the work, pupils merely "punctuating" with "yes," "no," and "I think so." Of course such exercises give little opportunity for self-expression and must result in flitting, fragmentary mental contacts. The only procedure practicable to reduce the number of questions is to have most of them formulated before recitation begins; the hurry and inspiration of a live class-situation are not conducive to making over one's habits of questioning.

(4) *Pupils' answers.* Pupils' answers are a large part of the subject of questioning. As has been stated they should be in the teacher's mind when questions are made and asked. They should be correct, clear, and asked in a tone loud enough to be understood by class and teacher. Unless the pupil is evidently on the wrong track he should be allowed to complete

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his answer uninterrupted. For much incoherent or inaudible reciting teachers are directly responsible. One who breaks in upon a reciting pupil with, "That's right; I know what you mean," should be very sure that the pupil is not one who needs practice in expression, and that no other member of the class needs to hear the statement deliberately and clearly given. Especially unfortunate is it to encourage inexact or incomplete contributions from pupils who are vague or slipshod in their use of language by accepting anything less than the clearest statements which they can make. "You did not tell that exactly right but your meaning is clear" is sometimes pardonable if a pupil is timid, but it should not be overworked. The mystic and unduly egotistic attitude of "I know but I cannot tell" needs no encouragement.

d. Use of illustrative material. (1) *Nature and purpose.* To teach skillfully one must have and use a vast fund of illustrations and illustrative devices. Following Adams, "Illustration may be said to be the process of throwing light upon something that is assumed to be known already in a vague and more or less unsatisfactory way."[1] It may also have for its purpose to make the pupil realize more vividly or appreciate and enjoy. Comenius was speaking of vivifying illustration when he said that "he who has seen a rhinoceros or even a picture of one knows better than he would by six hundred descriptions." The vagueness and unreality of much which is taught in school is typified in the difference between the use of *learned* and *knew* in the case of a class to which the motions of the earth had just been explained by means of a globe. Wonderingly, a pupil questioned, "Does

[1] Adams: *Exposition and Illustration in Teaching*, 18–21.

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the earth go that way?" "Yes; have you never *learned* that?" "Oh, yes, but we never *knew* it before."

In directing the work of a class the teacher tells or describes, shows more or less objectively, or has pupils act or do. As an example, the pupil may be told how to make a paper drinking cup, watch the teacher make it, or make it himself. In this case the second and third may be classed as illustrations of the first. A teacher who expected pupils to fold such a cup properly after merely hearing verbal directions would evidently be disappointed. The power to use generalized concepts is not very great among children. This is seen in the well-known fact that abstract moral teaching which does not lay hold upon flesh-and-blood illustrations of principles presented accomplishes so little.

Illustrations may often be regarded as a means of helping to build up an incompleted generalization. This is clearly shown in children's definitions usually based upon the concrete imagery of illustration. The accompanying definitions from lower intermediate grade pupils show the dependence: "A station is where people get on a train. Caution means to look out, to take care. Patience is being quiet, not fussing." At a certain stage a child, asked to define patriot or inventor, will probably reply "George Washington was a patriot," "Edison is an inventor." None of these is finished, but they represent the illustrative beginnings of real definitions which will gradually acquire fuller meanings.

(2) *General suggestions for use of illustration.* (*a*) *Use too many rather than not enough.* It is better to use too many than too few illustrations. Since, supposedly at least, the teacher thoroughly understands all he is teaching and all is sufficiently vivid to him, there is constant tendency to neglect illustra-

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tive devices. Sometimes the best thinkers are most exposed to this danger. Knowing only their way of arriving at ideas, it is difficult to comprehend the dependence of another type of mind upon concrete imagery.

(*b*) *Both pupils and teachers use illustration.* Pupils as well as teachers should be expected to illustrate their contribution to the recitation. A pupil, being asked to explain the difference between *suspended* and *supported*, pulled a string from his pocket and with a suspended key made the matter clear. For a pupil to do anything except talk when asked to recite was unusual enough to attract so much attention that the teacher asked him to "keep his top-string in his pocket." In many classes mild excitement would ensue if a pupil, unbidden by the teacher, should step to the blackboard and draw a few lines or a sketch in explanation of his talk. The blackboard should serve for spontaneous illustrative drawing for all who can use it. If the teacher endeavors to make clear his remarks by its use, why should not the pupil? Given a little encouragement he would save much time, and not infrequently prove more expert than his teacher.

(*c*) *Illustrations should have worth in themselves.* Only illustrations worth while should be used. Many children remember their important lessons in this form and never get beyond the intellectual plane of referring to the single instance. Like the child who must face the north in order to distinguish his right hand from the left or imagine himself standing where he first learned the points of the compass if he wishes to be clear about directions, they must call up a story to stand for types of conduct or a model sentence to illustrate punctuation or grammatical usage. If this very common mode of mental action is to be typified in "It was like *that*

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one," how important that the one remembered shall be typical and the best of its class for this purpose! In the wealth of material which may be used only lack of discretion or of effort on the part of the teacher permits employment of less than the best.

(*d*) *Illustrations must be related to material or recitation.* Illustrations must be brought into relation to the lesson which is being presented. Though responsible, as has been said, for a value of its own, when used to vivify or explain it is subordinated in purpose. If the illustration is exceedingly interesting or continued for a long time, the class and sometimes the teacher lose sight of what was being done. Occasionally it is quite permissible to change the purpose and follow the illustration, but it should be recognized that the original lesson is not being taught. For example, a lesson in percentage might be vitalized by a study of market reports in a newspaper. This might lead to questions upon other phases of the market report, which could be more economically answered while interest and newspaper material were present. Such deflections of purpose are legitimate if they do not result in demoralization of all plans, but following temporary interest through several phases of a market report could hardly be extended to unplanned discussion of jokes, cartoons, or sporting news of an adjoining page.

The bearing of the illustration should be apparent and the material chosen apt for its purpose. What is employed in explaining should not itself need explaining. Nothing is more difficult than to find illustrative material appropriate to the varying intellectual levels of a group of small children.

An abuse of illustrative material is the common device of using "illustration" merely to hold attention, even by mere

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amusement. When such a procedure is extensively followed, it becomes necessary to specialize so fully in "extras" that time is left for little else. And even by the teacher's most zealous efforts, the pupil's appetite in time reaches the point at which it has no relish for consecutive or well-organized content unless the element of novelty is present in an eminent degree. "Too dry" or "too deep" is his condemnation of all which may not be picked up in illustrations.

(*e*) *Personal illustrations used with caution.* Personal illustrations must be used judiciously. To say, "Suppose I were General Scott" or to use stories based upon personal experience adds a touch of vividness, but pupils easily grow weary of one who is constantly bringing himself into his teaching, "talking about himself," as they are apt to express it. If the form is, "suppose *you* had —" or "if *you* were Mr. Smith," or "Suppose your mother bought tickets for you —," the instructor must be very sure that he is well acquainted with all the circumstances. The pupil may be embarrassed rather than helped to think if the name Smith is that of an intensely disliked rival or if mother's failure to buy tickets has been the cause of a recent disappointment, recollection of which is still a near tragedy. Especially hazardous is the use of personal illustration with pupils who are sensitive or nervous about deformity, peculiarity, or unusual size.

(3) *Common forms of illustrative material.* Among more commonly used illustrative material may be named pictures, diagrams, graphs, maps, globes, stories, numeral frames, and model sentences. Only a few of these will be discussed.

(*a*) *Pictures, drawings, graphs, diagrams.* Pictures and drawings are indispensable illustrative media. Clippings, postcard views, lantern-slides, stereographs, motion pictures, il-

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lustrated books, and magazines all have a place in instruction. From the museum of the large school or system to the individual collection which every teacher should accumulate, pictures occupy first place as illustrative devices. Those in cheap textbooks are often so poorly executed and unimpressive that teachers pass them by, assuming perhaps that pupils will "see them anyhow." See them they probably will, but this is far from identical with securing a full measure of what they contain. Specific study of pictures accompanying lessons represents time well spent. Study-questions like "Explain the picture on page —" or "By means of the pictures on pages 54 and 162, contrast modes of transportation in 1820 with those of 1918" can be utilized to advantage more generally than they now are. Not only should the very large amount of textbook illustration be utilized, but the better pictures, which all may easily collect from other sources, should be rendered instantly and easily available by some system of indexing; the value of abundant pictorial illustration ever at command is sufficient to justify great effort in this direction.

The largest collection, no matter how carefully catalogued and made ready for use, still leaves much need for the teacher's effort in blackboard drawings, diagrams, and graphs. While a large proportion of teachers have little skill in use of crayon, it is possible for all to represent many relations more vividly through this visual means than by an endless amount of unsupported description. Measurements and shapes of walks, rooms, fields, and other surfaces are made easier of comprehension by means of a few representing lines; pupils as well as teachers should draw the geometric figures found in their problems. Shapes, outlines, direction, and relative size can be indicated without training in drawing, but instructional

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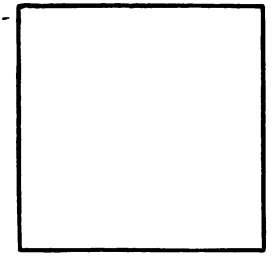
efficiency would be greatly increased if all were given sufficient training to go far beyond these beginnings in their illustrative blackboard work. The unskilled teacher who feels keenly the need of such skill has started upon the road to acquire it; one who is never mortified at his inability to draw is content to do poorer teaching than should satisfy him.

Graphs. Graphs of various kinds are a form of visual illustration designed to demonstrate vividly relative magnitudes. While a few pupils can make comparisons as well without the graphical representation and find it necessary to learn the illustration as something added, it seems that most children find this device an aid. To say that North Carolina is twenty-five times as large as Delaware has as much meaning to some as the linear comparison:

North Carolina, ——————————————

Delaware, —

or



North Carolina

Delaware

but if both are employed, the chances are greatly increased that all will comprehend, since the numbers may be almost meaningless to a few who grasp relative sizes in the graphical figures at once. If ratios increase greatly beyond numbers of everyday experience, the only impression usually conveyed is

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that of very much greater or less; use of graphical means here merely results in increased vividness. To say that the population of New York is one thousand times as great as that of the town in which the pupil lives has as much meaning as

Town New York

and neither signifies anything more than " very much larger."

In all graphical representation, only means which further the specific purpose should be utilized. If the design be to indicate comparative amounts or magnitudes only, use of several colors is confusing rather than enlightening. If the production of wheat during a succession of years is to be portrayed, one color only should be used. If the values of the wheat and corn crops for a given year are compared, plain columns or columns of dollar signs are better than to represent the value of one by sheaves of wheat and of the other by ears of corn. Linear graphs rather than those which require comparison of areas are usually to be preferred if more than vague impression is the aim, since most pupils have very inaccurate perceptions of comparative areas. In order that graphs may be intelligible they must not alone be consistently directed toward a purpose, but should be simple and clear in execution. Few items can well be represented in any one drawing; even in high school grades the presence of many lines or several shades of color is confusing. In addition to the instructional value of graphs, their very general use in popular and technical periodicals renders it essential that pupils should acquire facility in making and understanding this representative device.

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Diagrams. A diagram is usually an abridged drawing in which certain features are made prominent by the absence of others not essential to the immediate purpose. It thus happens sometimes that the diagram is better than a picture or even the object which is being studied, since it discards irrelevant details and isolates significant items. Thus the lines representing walls or partitions in buildings may better place spatial relations in view than can any other means, since all is before the eye at once, whereas one wall effectively hides another on a picture or in the structure itself. For similar reasons circulation of the blood, parts of the nervous system, and the plan of the digestive tract are physiological processes in which diagrams best aid.

Diagrams to indicate word or thought relationships are sometimes the simplest means of explanation. The distinction between *in* and *into*, and *between* and *among* may be shown as in the accompanying example, typical of such devices in common use by good teachers.

1. *In* and *into*.

Because of the rain, I am *walking in* the house for exercise.
I am walking *into the house* to get my hat.

2. *Between* and *among*.

A is *between* B and C.
M is *among* N, R, S, and W.

A is *between*.
M is *among*.

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Various forms of diagrams are of value to indicate relations of words or parts of sentences. Thus the fact that predicate nouns and adjectives in some way belong with the subject, whereas the direct object sustains an entirely different relation, may be made clearer to some minds by the accompanying device in which the determining line is the little mark which follows the verb.

John | *is* ⌒*captain.*

John | *is* ⌒*brave.*

John | *takes* | *captives.*

Most pupils are able to understand all such relationships with little or no use of the diagram; in any case its value except in very simple forms is doubtful. Diagraming sentences often becomes a habit, — almost a disease, — those addicted to its use seeming unable to satisfy themselves as to syntax relationships until all have been duly disposed of according to lines. Pupils of indifferent ability who have developed under a régime of diagrams answer promptly that adjectives belong *under* nouns or that the predicate is to the *right* of the subject. Such mechanical understanding of our modes of expression is formal and useless, now and then positively injurious. It is well to remember also that for many expressions no simple diagram can be devised, even by the most ingenious. Owing to its limitations and a tendency to become a fetish, sentence diagraming is a form of illustration not to be recommended beyond its most elementary forms. Though never indispensable, limited use of simple diagrams often means immediate economy of time in the recitation. When employed

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for this reason, they cease to be primarily an illustrative device.

(*b*) *Maps.* Maps for illustrative purposes are so essential that their value is universally acknowledged. While complaint is sometime made of the poor maps in textbooks and on schoolroom walls, there is little doubt that the technique of map-making is far in advance of the teachers' ability to make use of them. The grosser and amusing consequences of poor map teaching have received a share of popular discussion. Thus in some form the story of the child who grew up believing that Massachusetts was red and Mississippi yellow because of the color of these states upon his map has been repeated as a bona fide experience ever since colored maps came into use in our public schools, though it is very doubtful whether any person of thoroughly sound mind ever had all of the experience or whether it made any difference what others thought of the colors of states.

Yet this illustration, much overworked but pleasantly received in teachers' institutes, has the value of calling attention to a misconception of a map's real function, which is not to *resemble* the part of the earth studied but to represent it diagrammatically. Direction, relative distance and size, outlines, shapes, location, and position are the most important values which pupils should be taught to secure from map study. These are more clearly and vividly presented through the map as a diagram than by mere telling or description. It is worth while also to remember that ability and readiness to make use of maps are being developed along with knowledge of various parts of the earth's surface.

There is serious need of greater emphasis upon map studies; through excessive formal memorizing of unimportant and

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unrelated items, "place" geography has suffered too great a decline. Better questions, emphasis of the important rather than the insignificant, and closer linking of map-studies with vital relationships of present-day life are needed. In the study of an important country or division, the map should be fixed definitely and vividly as part of the pupil's permanent acquisition. In addition to merely using a book or wall map as he studies or reads, the pupil should be directed in making his own. With territorial divisions of great importance it is not too much to expect fairly accurate outlines to be drawn from memory; on the other hand it is doubtful whether the intricate contour of a map like that of Europe should be drawn at all; here stencils or outlines should be provided. Putting together dissected maps is excellent preparation for more detailed study.

(*c*) *Illustrative stories.* Stories are a most valuable means of illustration; however, they lend themselves very easily to use as mere amusement or expedients for holding attention regardless of application. The story by way of illustration should be as well told as if for entertainment only, but it should have the added quality of "going somewhere," which should be in the direction of the lesson. Spinning irrelevant yarns may hold attention and still be the cause of losing time. A good story-teller loves a good audience and pupils afford such a listening group since the constraint of the schoolroom renders them very ready to discover values in the teacher's stories; if pupils listen gladly to stories, the teacher should reflect that this may merely express preference for the diversion rather than anything else the teacher is likely to offer. The minority of teachers who are excellent story-tellers should make sure that their illustrative stories illustrate; the majority who

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have little attainment in this direction should acquire the art but use it discreetly. For those to whom illustrative story-telling does not come readily, it is worth while to make a small collection of stories aptly used, noting in each case how the application was made. If this is done and selected stories are rehearsed until they can be well told, any teacher should develop facility in using this form of illustration. All teachers know the interest-compelling power of a well-told story; it seems a deplorable loss to leave unutilized a device of so great value.

e. Use of textbooks in the recitation. The use of textbooks, more general in this country than elsewhere, in part because of meager educational requirements exacted of teachers, has been the cause of much complaint not always wisely directed. The type of teacher who looks up to the usual school textbook as a complete and final authority has not made a great success of textbook teaching, but it is appalling to contemplate what he might have done without the book to lean upon. When all teachers are well trained in the content and method of their subjects there will be less exclusive dependence upon textbooks and more teaching of subjects. The present tendency in this direction is shown in the increasing amount of supplementary and reference material wherever teachers reach a higher level. The movement is toward the use of many books instead of one and perhaps in the direction of doing more at school under supervision and less at home. Both of these changes should still further decrease undue dependence upon a single book but there is no reason to look upon a textbookless school as a practical ideal. Excellent books have developed in some subjects; it is increasingly difficult by any system of adoptions to place poor or unteachable books

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in the hands of pupils, and many teachers have acquired a superior technique in the use of textbooks which is a real contribution to the effectiveness of classroom presentation.

The primary difficulty is that so many teachers are acquainted *only* with textbooks — sometimes with but one in each subject. One who has read nothing except a textbook may use the book fairly well but his recitation cannot be a finished piece of work because he has little background; yet thousands of teachers go before their classes without having read a more detailed or thorough treatment of the subjects presented than the pupil is expected to read. With only moderate training and many daily preparations to make no other course can be followed by some elementary teachers, but it is unfortunate to work under these circumstances long enough to develop habits or ideals satisfied with such narrowness of teaching.

Upon a still lower plane is the teacher who, because of inadequate preparation, is ignorant of what is contained in the textbook lesson — sometimes unable even to pronounce its words correctly or answer reasonable questions — which he has expected pupils to master! Such a teacher's ideal of conducting a class rises no higher than that of sitting at his desk with book open, learning his lesson, making his teaching plan, and formulating questions as he lumbers heavily through the recitation. Of course he pursues the order laid down in the book, never rising above the immediate lesson far enough to see other relationships than those of the sequence of pages or paragraphs. Without his own book open he would not run longer than an unwound clock, but he presupposes that pupils know their lessons and so must keep their

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books closed. "When I consult my book you may use yours," such teachers should say to their pupils.

A further recital of teachers' sins committed in the name of textbook instruction is unnecessary. It is the poor workman who quarrels with his tools. Such teaching as that hinted at in the preceding paragraphs is unfortunately not hard to discover among the poor artists of the teaching profession. Mention of these shortcomings furnishes a motive for self-examination and criticism without which no teacher profits much by professional training or teaching experience. The unskilled teacher whose highest goal is expressed in holding a position and satisfying an easy community of lay judges may care little for a more excellent way; a true professional spirit, with its pride in fine service, is always warm to suggestions of better teaching ideals.

f. Suggestions for self-criticism in technique of the recitation. The way to become technically expert in conducting class work is to be relentlessly self-critical, turning every relevant suggestion to account whether it comes from pupils, colleagues, parents, or professional reading. The following includes some of the minor faults which characterize the work of many teachers. Perhaps no one does all of these unnecessary or wasteful things but nearly every instructor a few of them, sometimes habitually and inexcusably. Use the list a few days in checking yourself or another teacher; how many of these are discovered?

1. Teaching without the attention of every pupil.
2. Wandering or sidetracking because of lack of plan.
3. Talking too loud in order to talk down noise encouraged by the loud voice of the teacher.

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4. Talking too much because this is easier than to lead pupils to express themselves.

5. Using traditional devices regardless of their value in the present situation.

6. Repeating questions which have not been understood. (Questions sure to be repeated are seldom understood.)

7. Repeating after each pupil the answer he has just given.

8. Cheapening your commendation by superfluous praise. ("That's good." "That's good.")

9. Monotonously repeating such useless expressions as "all right," "of course," in questioning.

10. Permitting pupils to begin all answers with "Well" or joining chains of sentences with "and."

11. Asking obvious questions or those which indicate the answer.

12. Allowing bright pupils to monopolize the time.

13. Spending too much time helping subnormal individuals while brighter minds perish.

14. Using incorrect language or inexcusable slang.

15. Making meaningless gestures or nervous movements; maintaining ungainly or awkward postures.

16. Standing or sitting uniformly in the same part of the room.

17. Conducting recitations in content subjects with open textbook, meanwhile *requiring* pupils to keep theirs closed.

Exercises

1. (*a*) "The recitation method makes the home the real place for gaining knowledge, and the school the place for displaying it. We might profitably invert this arrangement, letting the school be the place for gaining knowledge, and the home the place for applying it." (Henderson: *Education and the Larger Life*, 224.)

(*b*) Teaching even a small thing requires large preparation, since pupils are influenced by what is *not* said; the teacher is

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unable to teach up to the edge of his knowledge without being afraid of falling off, this fear reducing the effect of his efforts.

(*c*) "If the American-born teacher of French is better able to instruct American pupils than a Frenchman with whom that language is the mother-tongue, it is because he understands their difficulties better since his own tongue once refused quite as stubbornly the new linguistic paths along which his thought and tongue now move with theirs."

Find other apt quotations or statements upon the recitation.

2. It should be remembered that there are three parties to a recitation as a rule, the teacher, the reciting pupil, and the listening class. To which of the other two is the reciting pupil primarily responsible?

3. Part of the purpose of the recitation is to develop polite and sustained listening. Rank the following expressions of the teacher as means of stimulating attention from a listening class:

Please give better attention.

What did he say?

Those who do not listen closely must stay after school.

Do you agree with what he said?

4. "As conducted at present, the recitation assumes a perfect knowledge on the part of the scholar and has been devised apparently to give him a chance to display this knowledge. . . . The natural result is that the recitation becomes a time for hiding ignorance and putting forward the best foot of knowledge, a proceeding no doubt ornamental but less certainly useful." (Henderson: *Education and the Larger Life*, 224.) It has also been alleged that the typical recitation is essentially dishonest since pupils feel constrained to please the teacher with their answers. If these statements are true, what is the effect upon the pupil's character?

5. In many schoolrooms it is a common practice to send a group of pupils to the blackboard, assigning all the same topic or prob-

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lem for solution. Frequently pupils copy each other's work. Aside from its moral significance what educational value is there in such exercises for the one who copies his companion's work?

6. List all the inconsistencies of capitalization as shown in the blackboard work of pupils and teachers during a week. One teacher wrote these lists for a class to copy:

Meat	Fats
Milk	Butter
eggs	oil
Cheese	lard

7. A teacher who as a pupil had always been in large classes called a class of two in a rural school by a series of bell taps, thereby attracting the attention of all in the room. With the same class this teacher continued to spell by means of "headmarks." Give other examples of accustomed devices used in inappropriate situations. What would this teacher do if only one pupil were in the headmark class?

8. Which principles of effective drill are violated if the teacher points or permits pupils to point to each individual word in a primary reading lesson?

9. Appreciation of the beautiful is often best brought about without much analysis of the elements which combine into the complete situation. Thus a pupil may dislike boat riding and cloudy days, and his garden may have been ruined by birds; yet he might enjoy a picture which includes a boat, clouds, and a flock of birds. Discuss a fine picture showing details whose study would contribute nothing to its appreciation.

10. Occasionally a teacher is found who endeavors to organize nearly all subjects more mathematically than their content seems to justify. "There are three reasons for . . . ," "Give *the three causes* of . . . ," or "What are the three differences between . . .?" are typical of such teaching. Used judiciously definiteness in questions and answers is secured by this means. Find examples

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of wise and of unwise uses of numerical divisions of content in teaching.

11. Pupils often hold up their hands or recite in response to a general situation rather than to any clear understanding of the question asked them. A principal, wishing to prove this, visited several rooms, giving a brief talk ending with, "Now I want each of you to promise to *sagitate* your constitution every week." All promised until a boy in the seventh grade said, "I did mine yesterday." (Swift: *Mind in Making*, 50.)

Another illustration: Three prominent educators visiting a primary room were complimented by the teacher with a question addressed to the pupils: "How many of you are glad to see these fine gentlemen?" Every hand went up. One of the visitors asked the teacher to put the question, "How many would be glad to see these gentlemen hanged?" Every hand was raised again. What pedagogical inferences may be derived from the action of the pupils in the foregoing illustrations?

12. To illustrate the effect of what he terms "mental prepossession" in making a topic difficult, Jastrow mentions the conductor of a spelling contest who announced with an air of importance that the word he was about to pronounce was very hard to spell and cautioned the closest attention to his precise enunciation. He then pronounced what seemed for all the world like *cat*. All failed to give the correct spelling, which was then declared to be c-a-t. The story may not be literally true but it indicates the fact that when one expects a difficulty he is apt to find it or make it. A pupil often fails to answer a simple arithmetic question if it is asked as part of a subject in which he feels himself a failure; even what is well known by practical experience deserts him in the presence of a teacher supposed to be a sharp questioner, and a simple question becomes difficult in proportion to the number who have missed it. Find examples in your own experience of the effect of expecting difficulty. (*Fact and Fable*, 296–297.)

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13. An instructor suddenly asked a large class of high school graduates how many pounds there are in a ton; since no one answered he decided that no one knew, and he later gave considerable publicity to his opinion that high school graduates do not know anything. Wishing to test the matter another instructor gave opportunity to three classes of approximately equal training and ability to demonstrate their knowledge of the same matter as follows:

(*a*) He asked the first how many knew the number of pounds in a ton. Not quite half seemed to know.

(*b*) He asked the second how many pounds in a ton of clover hay. Not more than ten percent knew.

(*c*) He gave the third a problem involving knowledge of the number of pounds in a ton; all solved it.

From the evidence, did those high school graduates know how many pounds in a ton? Account for the differences in the four cases. Without warning ask an intermediate or grammar grade class how many know the table of *avoirdupois* weight.

14. (*a*) "How would you solve the fifth problem, Edgar?"

(*b*) "Edgar, how would you solve the fifth problem?" From the standpoint of opportunity to prepare an answer, which form is the better for Edgar? Which has greater teaching value for other members of the class?

15. Here are several questions similar to some you have heard or asked; in what ways are they objectionable?

(*a*) What about London?

(*b*) General Greene had command of which army?

(*c*) Which side is concave and which is smooth?

(*d*) Was it Cæsar in command or Pompey?

(*e*) How does minor music make you feel?

(*f*) Tell me about plants.

(*g*) How, when, where did he discover the island?

16. Seeing an inattentive pupil a teacher secured his attention by asking him a question, thus embarrassing the pupil and to some extent interrupting the lesson. Was this a measure of in-

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struction or of discipline? How would you rank this device as a means of accomplishing the purpose of the recitation?

17. Select from your own work or an observed lesson a question which brought an unexpected answer; account for the answer.

18. Illustrate from your own work or that of another teacher five good questions; five poor questions.

19. To determine their variety, copy the questions asked by a teacher whose schoolroom you visit. List the initial words of all questions. Ask some one to make a similar study of your questions. What per cent are

(*a*) *What*, *when*, and *where* questions?

(*b*) *How* and *why* questions?

20. Copy five or ten minutes of classroom work, showing as nearly as possible exactly what is said by pupils and teacher. Have a similar record of your own work made; in what way is this record different from what you expected?

(*a*) Many teachers overwork certain words; one used "all right" nearly two hundred times in forty minutes; another says "of course" in nearly every sentence. What expression are you using too often?

(*b*) How many questions a minute does the above record show? What is the relation of the number of questions to effectiveness in instruction?

(*c*) In this observation and record, what are the commonest defects in the answers of the pupils? When do you consider a question well answered?

21. By use of an ordinary watch estimate during several five-minute periods the amount of time used by the teacher and by the pupils. A little practice will enable you to do this with a fair degree of accuracy by drawing a line, above which is placed time used by the teacher and below that used by pupils:

e.g. Teacher	20	25	40	25	66	Total seconds 176
Pupil	10	10	1	5	21	Total seconds 47

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What proportion of the time is used by the teacher? Other things being equal, would you prefer the recitation in which pupils used two minutes in two answers or in ten? Why?

22. The following excerpts from recitation records represent the work of experienced and "successful" teachers. What faults are most readily discoverable?

(*a*) All right; we'll discuss that later. What is a line?
(*Attempted answer*)
Now what is a line?
(*Answer given*)
All right; now we had to make . . .
(*Remark*)
All right; now go up two inches . . .
(*Direction was complied with*)
All right; now what makes you think those lines will meet?
(*Good argument produced by several pupils*)
All right; use two as a base.
(*Construction continued*)
All right; let's use six inches.
(*Construction continued*)
All right; Truman, is three inches always three inches?
Yes.
Can it be any shorter?
No.
All right; then you'll agree.
Yes.

(*b*) All right; what is it like?
A plain.
Yes, a plain. Would it be as productive as a plain?
No, because it is too cold.
All right; have you heard of the Himalaya Mountains?
(*No answer*)

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Find them on the map. Have you EVER heard of the Himalaya Mountains?

No.

They are the highest, or one of their peaks, Mount Everest, is the highest mountain in the world.

All right; what about the Caucasus Mountains? Where are they?

(*Located*)

All right; have you found them? Between what seas are they?

(*Correct answer given*)

All right; we have spoken about the rivers and the mountains and the plains. What about the climate?

It's hot in the southern part.

What about the northern part? See the *Arctic* circle?

It's cold.

All right; if it extends from the *Arctic* circle almost to the equator would its climate all be alike?

No.

All right.

(*c*) Ran away from the masters into the slave? (States).

He would put him under? (Arrest).

According to the authority of the? (Law).

All states must form their laws according to what? (The constitution.) If the laws do not agree, they must change it so it will agree with the? (Constitution), and the constitution could not be changed unless they got a direct vote of the? (People).

23. The McMurry standards of judging efficiency of instruction are provision for initiative, motivation, judging values, and organization of subject matter by pupils. With these in mind and so far as possible ignoring technical correctness in such details as questioning, use of correct language, and posture of teacher or pupils, estimate recitations in several content subjects.

24. By means of this brief scale for observation of class work

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estimate typical recitations of several teachers. To prevent undue attention to particular phases the scale is weighted; that is, each observation phase is given a number of points, the total being 100.

	Points
1. External conditions under control of teacher: seating, posture, discipline	5
2. Economy of time: Getting started, managing teaching accessories	5
3. Use of illustrative material including the blackboard	5
4. Organization of lesson and plan	25
5. Explanation, telling by teacher	25
6. Questioning	15
7. Proper distinction as to character of lesson testing, drill, instruction, appreciation	10
8. Motivation and attitude of class	10

Make a similar weighted scale for your own use.

25. An old teaching maxim, excellent when properly understood, says: "Teach but one thing at a time." How would the maxim apply in the following cases?

(*a*) A pupil who reads objectively, hesitatingly, and too slowly has "gotten on the track" for a few sentences and is reading more readily than usual; he pronounces *nătional*, *nātional*. Should the teacher interrupt to give the correct pronunciation?

(*b*) A pupil who is wrestling with an arithmetic problem, the process work of which he hardly understands, makes a few poorly shaped figures. Compare the loss in neatness through the operation of the habit law if such slovenly work is not corrected with the loss in understanding if correction of the improper forms is made.

26. After comparing several sets of textbooks in arithmetic, language, spelling, and geography choose in each subject the book you would prefer, giving specifically its advantages.

27. A favorite device used by public speakers to hold attention

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is modulation of the voice. Observe the use of the same means by experienced classroom teachers. Which seems to secure the maximum of attention — loud or low tones?

28. Can you tell a story so well that those not compelled to listen because of politeness or the force of school discipline will hear you through? Find and tell stories to illustrate for lower grade classes each of these proverbs:

(*a*) The less said the sooner mended.

(*b*) They laugh best who laugh last.

(*c*) Haste makes waste.

(*d*) Leave well enough alone.

29. Evaluate each of these devices:

(*a*) Having pupils ask each other questions at the close of the recitation.

(*b*) Requiring pupils to stand in answering questions.

(*c*) Insisting that all answers shall be in complete sentences.

(*d*) Allowing a pupil to read aloud until the other members of his class find a mistake in his reading.

30. The accompanying part of a lesson plan has for its purpose the development of an understanding of insurance. It is included to show the pivotal questions (*), the anticipated answers (**), and the actual answers given by pupils in italics. Notice that the expected answers were usually elicited without the aid of many supplementary questions. Make a similar plan for teaching some other subject in arithmetic.

Lesson Plan on Fire Insurance

In the fire down town who were the losers?

(*Mr. Townsend*, *Mr. Kessler*, *Mr. Murphy* from fire, and others from water.)

*How may loss by fire be avoided?

**(By making fireproof buildings, being careful, and by insurance.)

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Fire wagon.

By fireproof buildings.

By insurance.

That wouldn't keep it from burning.

*What difference between your meaning when you say care prevents loss and when you say insurance does?

**(If you are careful, things don't burn up; if you have insurance, they may burn up but some one else has to pay the bill; the insurance company does it.)

In being careful the building may burn up, but insure means you pay a company and they will pay you if it gets destroyed.

*How does an insurance company get its money? What does insure mean?

**(People pay to have buildings insured; insure means that the company will pay for that building when it burns.)

Why, lots of times buildings don't burn down and sometimes people pay a long time.

You said sometimes they didn't burn. What does insure mean, Bertha?

I don't know.

Why, yes, you do. If you had a house and insured it — just tell what you think it means. [Another pupil explained.]

* What causes a person to think a building might burn?

** (They don't exactly think it will, but it might.)

If fire gets started, sometimes it is awfully hard to put out.

Sometimes a flue is bad.

Well, they don't know that it will, but it might.

This building wouldn't burn much, would it? Papa says under the floor it is all cement.

* If it were perfectly certain that a building would burn or that it would not, how much insurance would there be?

**(If the owner knew his building would not burn, he would not pay money for insurance; if the insurance company knew

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it would burn it would not agree to pay for it, so there could be no insurance.)

Only a little.

There wouldn't be any; it would be a waste of money.

They can't know.

Then it seems there must always be an uncertainty about there being a fire if there is to be insurance. This is called a risk. Insuring property is called taking a risk.

Is that why life insurance companies will not insure soldiers — because of the risk?

Yes. The money paid for taking a risk is called the premium. Tell me what insurance is.

It's the amount of money paid in case of loss.

*Name some conditions that would increase the risk, Thelma. Bertha.

**(Wooden building, wooden building near, explosives, location where fire protection is poor.)

Oh, wooden buildings.

Frame buildings with defective flue.

Straw in the mortar; that was the trouble in the first building.

Any building not rock outside if it is near a factory where big fire is.

Yes, relation to other buildings; in the row of buildings on Main Street you saw how they burned in a row.

If a man saw a fire coming down the line to his building, could he go then and get insurance?

The company would be likely to have better sense than to do that; compare the risk in a small town and in a city.

A small town has no good fire department.

In the city they have a ladder that folds out as high as this building.

In the city they have fire wagons for every division.

In Chicago they have a fire wagon that looks like this. [Boy stepped to board and made a drawing.]

Mr. Smith said he saw sixteen fire wagons go to one fire in Kansas City.

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Compare factories with dwelling houses as to danger.

The factory is more likely to burn because of the materials they use.

In a powder factory fire is very likely.

* How would such conditions affect the premium?

** (The greater the risk the higher the premium.)

The greater the risk the greater the premium.

If the risk is great, they charge a greater rate.

* How much insurance would the owner be likely to take on a building worth ten thousand dollars?

** (If he could take more than it was worth, he might set fire to it; the company would not take a risk as big as the value of the property.)

Usually they try to take a little more than it is worth.

No, they don't either.

What if he were allowed to insure for all he wanted to?

Ten thousand or more.

He might take eleven thousand or twelve thousand.

The company would lose.

He might burn it himself.

But he could be prosecuted.

Can't you burn your own building?

Not to get your insurance.

Well, we had a neighbor who had an old building and he set it afire, some people thought.

* Property is usually insured for about two thirds or three fourths of its value. How do you suppose the men whose stores were destroyed get their money?

** (They would take the agreement or promise of the company and claim their money.)

Go and collect it.

Just get it.

They would have to have proof, wouldn't they?

They have to have a man come from the company to see how much is lost.

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What if the paper got destroyed?
The company has a record.
What if the company is not honest?
People are not wise to insure in a company that is not honest.
The agreement is called a policy; when one insures property, he is said to be taking out a policy for whatever the amount is.
Summary was then made including policy, insure, insurance, premium, and a few simple examples proposed for solution. Pupils were then asked to make up insurance examples.

Readings

Adams: *Exposition and Illustration in Teaching*, 17–36, II, IV, X, XII–XVI (Illustration).
Bagley: *Classroom Management*, XIII.
Bagley: *Educative Process*, XIX, XX (Induction, deduction).
Betts: *The Recitation.*
Charters: *Methods of Teaching*, III, IV (Subject matter and aims).
Colgrove: *The Teacher and the School*, XVIII (Daily preparation).
Colvin and Bagley: *Human Behavior*, XI (Habit); XVII (Economy in learning).
Dresslar: *School Hygiene*, XX (Hygiene of instruction).
Horne: *Story-telling, Questioning and Studying*, II (Questioning).
Keith: *Elementary Education*: 151–163 (Questioning).
Stevens: *The Question as a Measure of Efficiency in Instruction.*
Strayer: *The Teaching Process*, IV–VI, VII (Appreciation), X, XI, XVI (Lesson plans).
Thorndike: *Education*, VI, VIII–X.

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CHAPTER VIII

TEACHING — THE STUDY PERIOD

What study means. Study as commonly used means the part of the teaching-learning process which is principally carried on by the pupil with a minimum of immediate participation by the teacher. Accepting this interpretation of the term, the writer assumes the common picture which comes to the teacher's mind when study is mentioned, — that of a pupil seated at a school desk with a book before him, more or less seriously intent upon acquiring information, memorizing or fixing habits by repetition, or solving problems.

In most schools children spend a great deal of their time in exactly this occupation while the teacher's attention is given to a reciting class; it is probable that no phase of classroom activity is more in need of serious consideration than this of the pupil's contact with books, almost universally associated with "study." It is conceded that in no school exercise is there greater waste; none is harder to analyze and discuss pointedly, and for no part of his work is the typical teacher less prepared than directing and supervising study. It is sometimes said that the purpose of the school is to make the teacher unnecessary, that the better he is the sooner he eliminates himself from the pupil's needs. All such statements, which are at least partly true, presuppose that one important purpose of the school is to give pupils power to do

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independent work with books. Granting the foregoing assumptions, essential conditions for study will first be considered.

Essential conditions for study. 1. *Motivation.* Study outside of school occurs only in the presence of a *felt* need, varying in its immediateness from the feverish reading of a time-table by an anxious traveler to the more steady interest of the research student intent upon finding how the ancients conducted their government. In either case the one who studies is somewhat vitally concerned with, or zealous about a problem which, for his own clearly perceived purposes, he is endeavoring to solve, or he would use his time for another purpose.

In spite of many interesting resemblances, the schoolroom study situation is usually quite different; and only exaggerated notions of the value of a good device result in the claim that pupils should ideally study only problems whose solutions are necessary elements in their play or in accusation that the school which does not make unlimited opportunity for juvenile research has failed to provide proper motivation. Upon the somewhat rare occasions when pupils become conscious of their own life problems which they must solve, the force of interest is not sufficient to secure sustained activity in the solution. Instead of problems arising spontaneously, it requires all the teacher's ingenuity to present problems which the pupil must *adopt* as his own, and then to furnish the sustaining element of this adopted interest until something worth while has been accomplished for the child.

A skillful teacher is able to present the necessary school tasks in such a way that the pupil is hardly aware of the divergence between what he needs and what the school in-

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sists he shall care for; unskillful teaching makes the pupil feel keenly that he is studying under compulsion, which is little better for his intellectual appetite and assimilation than to be made to eat when not hungry. The problem form of assignment, already discussed, has the advantage of lending itself to reshaping as the pupil's own matter for investigation. "How to make fudge," readily becomes, "How I may make fudge"; "How to plan a picnic," is easily transformed into, "How I shall prepare for the picnic next week." The foregoing are much better than "Fudge-making" or "Preparation for picnics," simply because they are more easily appropriated by individual pupils.

In the field of doing or making things it is not especially difficult to formulate such problems. In another class of subjects, such as geography, history, and literature, the pupil may often be led to a vicarious interest — imagining himself in the place of some race or character with a problem to solve. As soon, however, as more remote though not less vital material must be acquired, it is often impossible to identify closely with the pupils' present needs material which he must nevertheless study long and earnestly in the prospect of some future demand. Examples readily recognized are the multiplication tables, most spelling exercises, vocabularies and poetry memorized. Recognizing practical limitations, it should be the purpose of the teacher to keep the pupil studying his own problems whenever possible, and to make it natural for him to adopt and work out the human problems encountered in the subject matter of his study. The less material accumulated merely because its mastery is required, the more effective is the motivation for effort. Partial attention and wandering energy easily develop when the pupil

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has no intrinsic or adopted interest, neither a problem of his own nor one borrowed, and is merely preparing answers to possible questions of the teacher.

2. *Concentration.* Concentration upon what is being studied is essential. Study is serious, zealous, persistent; it is often accompanied by physical tension, frowning or vigorous movements of lips or setting of the teeth. Other things being equal, the stronger the interest, the greater the degree of concentration. But with approximately equal motivation pupils differ widely in ability to give sustained attention. All should at least be made to realize the importance of this power and led, so far as possible, to acquire it. By stories of men of genius whose attainments have depended upon their ability to pursue a problem, oblivious of things external, the pupil may be led to see that nothing has ever been accomplished by flighty or dissipated application; in a sense this is building an incentive for sustained and undivertible effort.

Much may be improved in the external conditions which often disturb during the study hour. A genius may lose himself in a mathematical theorem while walking through a busy street; most pupils are interrupted in study by the presence of a reciting class, by every request to borrow a book, for help in spelling a word, or for information about the assignment of tomorrow's lesson. Skillful management reduces such interruptions to a minimum by noise-saving signals, devoting definite times to preparation for work during which all pencils, pens, ink, reference books, and other materials are made ready, and by intelligent anticipation in assignments of questions likely to be asked. Should any one believe that pupils by practice become able to overcome the impulse call-

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ing for response to disturbances, it may be said that repeated opportunity for sustained and undivided effort is the best way to develop concentration.

3. *Recognition of the nature of the lesson being studied.* Recognition of the nature of the lesson in hand is of vital importance. If material is to be memorized, it becomes principally a question of economic procedure; the selection should be understood and then committed by the "whole" rather than by the "part" method. That is, reading a poem or paragraph through a sufficient number of times to fix it is more economical and more likely to result in permanent impression than learning a stanza or a sentence at a time. In acquiring a process, as in arithmetic, it is often wise to neglect reasons for some steps, understanding being gradually achieved through application of the process. With an occasional pupil the best procedure is to discourage reasoning at first by some such advice as, "Most of the others seem to be solving these examples; suppose you solve all in this lesson and maybe you will see through them. If you do not, we shall talk about them again after you have learned just what you have done each time." And there are a few processes, like the inverting of the divisor in division of fractions, upon which time spent in explanation is, to most classes, idle waste.

On the other hand, it is equally idle as well as wastefully mechanical to memorize exact words of a text when thought, reason, or appreciation are involved, as in story telling or subjects like history and geography. Pupils who find these difficult often are those who work very hard at memorizing whole sections of textbooks, but are able to make little analysis of what they are doing. A pupil need not be very far advanced before he can begin to discriminate among lessons

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and choose his method of study according to the character of the task before him. Guided by a skillful teacher or a succession of skillful teachers who direct attention to the necessity of adapting method of attack to the nature of the subject matter, the kind of study waste mentioned in this paragraph should be mostly eliminated by the time the pupil reaches the upper grades of the elementary school.

Related to the types of lesson and its proper attack is the question of mental attitude, quite fully discussed by McMurry. Should a pupil accept without question, reject, doubt, or hold in suspended judgment, and verify the statements of his lesson? Clearly, study which involves memorizing or fixing a process leaves no great scope for rejection or doubt; challenging the elementary combinations in number work or the word order in a classic is a waste of time. But there is opportunity in most content subjects to develop an open-minded attitude as opposed to servile acceptance of what is written or dogmatic rejection of what has not yet been experienced. Since liberal-minded citizens must be open-minded, teachers should early cultivate the attitude.

4. *Memorizing an important element in study. a. Intelligent recognition of the part played by memory needed.* Memory power is essential for study. The abuse of memorizing by poor teachers, requiring pupils to commit useless or poorly selected materials, and the need of emphasis upon other mental activities has led to a vast decrying of memory work. Of exercises which require memorizing many teachers speak rather apologetically as something which they cannot do without but of which they are none the less heartily ashamed. "Memorizing should be a by-product," we are told, which is very true to the extent that learning incidentally or some-

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what unconsciously is a good plan — *provided essentials are thoroughly acquired.*

But while widespread discussion of memorizing has effectively changed school work for the better it has also resulted in much superficial teaching, half learning of what should be completely mastered, or learning for the day what should be fixed for life. No one defends exclusively memoriter methods, but stronger teaching would result from the recognition of the important rôle played in education by memory.

Acquiring the multiplication table, "the most difficult achievement in all the realm of mathematics," is simply an enormous feat of memorizing rendered less impossible, to be sure, by many convenient associations. Songs and poems become ours only through memorizing, and that of the rote or unreasoning type, since their beauty depends upon a series of euphonious words and is entirely spoiled by "giving the thought in one's own words." All attempts to eliminate the necessity of memorizing English spelling by reducing it to a reasonable basis are doomed to failure because the spelling itself is unreasonable. No one ever became a good speller by means of rules or dependence upon the sounds of words unless he was also able to *remember* some thousands of exceptions. The words of a vocabulary, English or foreign, are memorized. Even geometry — the age-long agent for developing "reasoning power" — depends upon memorizing, since no one can well prove a theorem unless he recalls what is to be proved as well as some of the steps of proof.

b. Original retentive power not capable of direct improvement. For the improvement of poor retentive power due to original nature, teachers can do nothing. While some pupils lack

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ability to retain in all fields, poor remembering usually shows itself quite specifically in certain relationships or subjects; one pupil remembers dates, another colors, and a third geometrical forms. In these cases memory seems to follow interests due to experience; "attention is the stuff which memory is made of." In general one remembers what seems important; the teachers' work is to widen the province of what the pupil cares for, to show him that a wide variety of things is worth caring for and remembering.

c. Memorizing aided by economical organization. The teacher may improve memory phases of the pupil's work by making economical organization of subject matter, utilizing associations by teaching together what should be recalled at the same time. Analysis of the types of material which must be memorized sometimes points the way more clearly to means of directing the studying pupil.

Memorizing may be (1) of purely arbitrary character, in the case of facts such as, "Columbus was born in Genoa" or "He sailed toward America in 1492," or "Twelve is a dozen;" (2) it may embrace conclusions based upon reasoning; as, "Brazil has a warm moist climate" (because —— ——), in which the pupil should be expected not only to recall what he needs, but to connect it with what already has been learned. It is evident that such memorizing is principally giving meaning to the arbitrarily learned material of the preceding type. (3) Sometimes it is necessary to memorize a chain of reasoning rather than either facts or conclusions, as in the development of mathematical formulas in which each step suggests the next, long division being the best example, perhaps, in arithmetic. While the pupil cannot be expected to make any such analysis of his own work, the teacher who can

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is the more capable of formulating study questions and intelligently directing.

In addition to what already has been said about economy of the whole rather than the part method in memorizing, the laws of forgetting show the necessity for repetition of what is to be retained at gradually lengthened intervals. That one impression is seldom sufficient to insure recall is made evident in the familiar experience of forgetting a story heard but once. Though remembered as a good story, one struggles in vain to recall it. The same story heard two or three times, or listened to and then told, is acquired so thoroughly that it may be recalled at will. It is one of the merits of history courses arranged in cycles by which each character, event, and epoch is presented more than once that recall is far more likely to occur. To assure repetition of memorized material at lengthening intervals until there is scant probability of its being soon forgotten is within the province of the classroom teacher.

Mnemonic devices are helpful enough to some pupils to receive notice by teachers, though it is easy to overrate their value since many find the device an additional load to carry. "Thirty days hath September, April, June, and November"; the meaningless word v-i-b-g-y-o-r for recalling the order in the solar spectrum, *v*iolet, *i*ndigo, *b*lue, *g*reen, *y*ellow, *o*range, and *r*ed; f-a-c-e corresponding to the spaces in a musical score, are examples familiar to most teachers. The fact that one may feel no need of such props does not signify that none should be used. In any school, it may be reiterated, are many minds that operate in their own peculiar way, which is little likely to be exactly the teacher's method.

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Suggestions for making the study period effective. 1. *Making study a serious undertaking.* Convince pupils, by vigorous means if necessary, that study is an important matter, to be taken seriously and worked at persistently. This may be done by incisive questioning which reveals half-done tasks or failure to improve time, and by general attitude of taking it for granted that work must be done.

2. *Stimulate interest in learning with the least possible expenditure of time.* Develop in pupils ability to discriminate between actual study and the total amount of time used in preparing a lesson, including looking about the room or out of the window. In the case of home study help the pupil who honestly thinks he spends two hours in study to separate conversations, telephone calls, errands, and even brief naps from the time reckoned as school work. It is but natural that pupils should expect to please the teacher by reports of many hours spent upon lessons; the teacher often does well to place a premium upon learning in the least possible time instead of the greatest.

What has been said concerning concentration indicates that it is much better to reward the pupil whose application enables him to learn a lesson in twenty minutes than the dawdler who uses, or thinks he does, two hours for the same piece of work. "You spent a long time upon this lesson and it is well learned" has its place; so has "You spent two hours upon this lesson; how did you do it? most pupils could learn it thoroughly in half that time." By employing such means it should be possible to substitute short periods of intensive effort for more relaxed application extended over too long a time. Teachers sometimes countenance a dilatory attitude in the belief that a preliminary warming-up period is neces-

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sary before work begins. If the first part of the study period yields poor results, it seems more than probable that all loss may be accounted for in terms of the time required to put away gloves, bring stray pencils from obscure pockets, and the moral unreadiness to attack which makes all beginnings difficult, rather than because of any uncontrollable psychological factors.

3. *The waste of underlearning.* Effort expended in underlearning represents enormous though unmeasurable waste. The laws of learning indicate that the pupil who three-fourths learns a lesson has much increased his chances for quick learning if he later attempts to master it, but to all present intent he has done no more than the laborer who lifts a weight almost to its place but, failing to exert the additional strength required, is forced to leave it exactly where he found it. It is the last few strokes that bring down the tree, the last hundred dollars that lift the mortgage. Some pupils have never thoroughly learned any lesson; the teacher who can influence one of these to complete a few tasks beyond question may not only be opening to him a novel experience, but may be fashioning ideals which will in time revolutionize his study attitudes. The world is already well supplied with those whose highest standard is to "get by to-day."

4. *The waste of overlearning.* The waste of overlearning is less serious, perhaps, though it concerns a different group of pupils, and may be responsible for ills that have not yet been clearly perceived. Like underlearning it is still practically unmeasurable, though progress in educational measurements may sometime enable us to determine when a pupil should be allowed to desist from further study or practice; our present knowledge of standard requirements may be

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applied in the fields of writing and the mechanics of arithmetic. It is certainly useless for an eighth grade pupil to continue practicing handwriting when he habitually writes eighty or more letters a minute as good as quality fifteen of the Thorndike scale or the corresponding qualities of other well-known measurements. In many upper-grade rooms or classes a few pupils are quick and accurate enough to require no further practice in addition, and the time devoted by them to such work involves a large element of waste.

Individual teachers may often discover in their own assignments much opportunity for useless study. In the average spelling lesson half the pupils know perfectly the spelling of many of the words assigned but dutifully con these over a dozen times along with the few which need their attention. In many schools the career of such characters as Columbus is rehashed upon practically the same plane during several succeeding years. In such cases the question suggests itself to the thoughtful teacher, "What is gained by reteaching what is well known by every member of the class? And if perchance some dullard still does not know, is the gain in teaching him sufficient to compensate for the loss in overlearning of the other twenty-five?"

5. *Pupil's notebook as a form of study.* The waste involved in keeping notebooks is very great. They are disliked by pupils not alone because they require effort but because much of this expenditure of energy is useless or stupid. The teacher should determine clearly what the notebook is to accomplish and then make it secure that end. Generally speaking, such books should be very much more brief and more closely supervised. A notebook which is filled with misspelled words or illegible handwriting is developing wrong ideals; one which

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contains important information which should be, but is not, understood by every pupil is a pleasant delusion.

Not a few pupils thus carefully preserve in good form copious supplies of excellent material of which they remain quite ignorant. They are satisfied because the matter is disposed of; but if they have been too busy making notebooks to find time for study of this material the notebook is neither an economical nor strictly honest servant. It may even become the master, both teachers and pupils becoming slaves to the notebook habit. Every supervisor or school visitor of experience has wished for the power to forbid certain teachers the employment of the notebook device; doing without this expedient for a year would prove a hard experience for many teachers, but it would result in going back to it with a much clearer view of its function. "Where shall we copy this if we are not to keep notebooks?" some pupil asks. "Do not copy it at all; just think it over or learn it," would be an excellent reply more often than some teachers give it.

6. *Written work as a form of study.* Related to notebook making is the habit of studying by writing the lesson, sometimes several times. There is ample psychological justification for a limited amount of this kind of work but it easily degenerates into a fruitless procedure. Merely writing a lesson may require a minimum of attention; it may imply no organizing of ideas or sifting of values; it is often so mechanically done that an evident error is copied *ad finem capitis*. Even handwriting deteriorates very naturally since it is not done to be read. When the teacher habitually requires pupils to spend the study period in copying, the excessive amount of the product precludes the possibility of

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its being read even when papers are collected. This pupils soon learn and become increasingly careless.

Young teachers whose ingenuity has been exhausted in trying to insure study from idlers or the mischievous, sometimes hit upon the expedient of written work for the study period. It is so much easier to tell pupils to take very tangible paper, pencil, and book and write a given number of perfectly visible lines than to devise situations which will keep the pupil better though less evidently occupied. Many a teacher has started an irrepressible little mischief-maker upon a copying exercise of twenty lines, saying or thinking to himself, " Now I know he will be quiet for half an hour at least." Thus what seems to be a study device becomes an expedient of discipline. The teacher who keeps a child writing to insure tolerable behavior should honestly admit that the lesson is not being written to be understood or learned but in order that the school may have peace. A general reduction in the amount of writing required of pupils would in most schools be a decided gain. A reasonable consequence of this would be closer supervision of all written work.

7. *Home study assignments made with care.* Home study should be discerningly assigned. Most complaints from parents loosely object to the amount of home work required. Doubtless teachers have often made unreasonable demands; pupils below the fifth grade in most schools need little or no home study, with the gradual increase in the upper grades until an hour a day is not an unreasonable expectation for most eighth-grade pupils. So far as the quantity of the home work is concerned, as much parental complaint probably occurs because of too little as too great requirements, for many fathers and mothers fail to realize the necessity of

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play and relaxation for younger children, and are never better pleased than when all, irrespective of age, bring home books for study.

More general and serious than the fault of expecting too much home work is that of sending home the wrong kind of lessons to be prepared. Parents of keen perceptions complain that they do all the teaching, leaving only the quizzing for the teacher. Of course if teachers did more teaching and spent less time in quizzing, this would show very quickly in the character of the home work. As a rule nothing should be sent home for study unless it is understood; the pupil meeting a difficulty at school may ask the teacher for help, or consult a dictionary or reference work. It is not the part of wisdom to presuppose any of these helps in the home; nor is it safe to expect that the parent will be able or even willing to take the place of the teacher in answering questions. The fortunate pupil whose parents aid in his study has an unfair advantage unless he is helped so much as to discourage his efforts.

There is the added danger that matters but meagerly comprehended will be hopelessly confused by what appears to the child to be an entirely different method. Many teachers of arithmetic have found their instruction troubles increased by the home experience of the pupil who says, "My father knows a shorter way than that." Mental distress of pupils honestly unable to understand and with no source from which to secure aid, and the impossibility of exacting from a pupil preparation which he may with a show of reason insist was beyond his comprehension, are other objectionable consequences of careless home study demands.

Lists of words to be spelled, selections to be memorized, formal drill exercises in numbers, applications of principles

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well understood, and general reading with familiar vocabulary are examples of the right kind of home study work. The first reading of a difficult selection, new processes in arithmetic, and most other lessons should not be sent home for preparation unless carefully planned and previewed.

8. *Supervised study.* Observation has convinced some writers that the wastes of the ordinary study hour and of home work indicate that all study should be supervised by the teacher. This would necessitate reorganization of graded schools; it is at present an ideal impossible of attainment in most country schools. To eliminate home study by this means the length of the school day would need to be increased slightly.

Greater than these problems of necessary readjustment would be that of finding teachers skilled in supervising study. Where the plan has been tried some teachers conceive their function to be monitorial, — that of preserving discipline and keeping pupils at work. Necessary as these are, the teacher who finds time to knit, read extensively, or prepare a university extension lesson while supervising a class of studying pupils confesses by attitude a very inadequate conception of the work. Stated briefly the problem is to help the pupil in need without pauperizing him, that is, depriving him of ability to help himself through undue dependence upon the teacher. The study supervisor should usually find the pupil in need of help and then render him the assistance needed rather than that asked. To do this requires not alone thorough acquaintance with every pupil but a knowledge of mental laws as well. Some of the bearings of psychology upon effective study are discussed in the last paragraph of this section.

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9. ***Utilization of play instincts and incidental possibilities in study.*** To achieve the result of serious study by utilization of play instincts or incidental means not systematically organized or provided for is one of the marks of an alert teacher. It is better to interest a pupil in a tongue-twisting exercise like

> Amidst the mists and coldest frosts,
> With barest wrists and stoutest boasts,
> He thrusts his fists against the posts,
> And still insists he sees the ghosts,

knowing that he will before he is through with his fun try it upon most of his playmates, as well as every member of the home circle, than to ask him to practice a group of such combinations half an hour to improve his articulation. The teacher who fails to utilize the puzzle instinct of children by use of the magic square arrangements such as the one accompanying is losing an opportunity to secure the result of study through play.

1	15	4	14
12	6	9	7
13	3	16	2
8	10	5	11

In addition to the usual up and down, right and left, and crisscross additions, notice that any square of four numbers adds thirty-four.

Most persons receive important scraps of their education through vagrant eyes casually directed upon whatever chances to be within the field of vision. In the same way all of us pay tribute to advertising and business catchwords by memorizing without effort. The old-fashioned school motto left quite incidentally many fine sentiments woven into the

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lives of the present generation. Material such as memory gems and simple mathematical formulas may be economically and almost unconsciously acquired by being kept before pupils for some time and receiving occasional notice. Such flitting means are hardly more fatiguing than surveying figures upon wall paper, counting flaws and markings upon the windowpane, and similar exercises in which most pupils spend a very considerable amount of time. Many teachers could turn to fuller account blackboard space by using it for semi-permanent material to be learned casually.

Elimination of typical specified wastes in study. The closing section of this chapter is devoted to suggestions concerning typical difficulties encountered by studying pupils, and their diagnosis and elimination by teachers. Increased attention to this field should soon result in more intelligent insight. Effective study supervision, granting the application of a few general principles, must remain the problem of each teacher aiding specifically each pupil.

1. *Inability of pupils to read. a. Unfamiliar words.* The commonest difficulty encountered by pupils is inability to read. The problem in arithmetic is misunderstood, not because it presents insuperable mathematical puzzles but because of the presence of unfamiliar words, baffling sentence structure, or irrelevant elements. In the accompanying illustration the computation involved is the same, but the second problem presents the greater difficulty because the irrelevant "twenty" and less familiar "employees" are complicating factors.

(1) A force of men can clear the snow from one hundred crossings in an hour; how long will it take the same force to clear five hundred crossings?

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(2) A force of twenty employees can clear the snow from one hundred crossings in an hour; how long will it require the same force to clear five hundred crossings?

b. Result of eye defects or wrong grouping. Difficulties in reading are sometimes the result of eye defects or subtle mental peculiarities resulting in inability to make accurate perceptions or note minor differences and similarities. Examples familiar to every primary teacher are failures to discriminate between *d* and *b*, *m* and *w*, *p* and *q*, *on* and *no*, *was* and *saw*. Word recognition is often rendered difficult by apparently fantastic groupings of letters; the child who spells *b-* double *oo-* double *kk-* double *ee*, *p-i-n-g* or *mac-hin-ery* seems to be making himself obstacles; so does the third-grade pupil who reads: His brow is wet with *honey sweet*. (His brow is wet with honest sweat.)

c. Persistence of familiar meanings. What may be called the inertia of apperception results in study waste. With many pupils acquisition of significance of a word or a symbol renders it difficult to modify its meaning or even to recognize it in changed relationships. A pupil finding in his history lesson the statement "it was the intention of Lord Baltimore to found an asylum for the persecuted religious sect" repeated in all seriousness to the class, "He intended to build an asylum to keep this sect in." "While at school the poet lived on a *guinea* a week," is a further illustration. Careful study of lessons and pupils renders it possible to anticipate and prevent such mistakes.

2. *Useless correlations and needless imagery.* A similar source of waste is the tendency to carry meanings or imagery quite useless to the situation at hand. Young teachers first acquainted with the idea of correlation sometimes develop

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the notion that all or a large number of the meanings of every term must be followed out whenever it is mentioned. Study of the physiological effects of coffee is not aided by suddenly recalling its price or describing the geographic areas in which it is produced. Likewise a coffee problem in arithmetic gains no value in meaning by referring to its taste, smell, or effect upon the nervous system. The spelling of cake is not related to its shape or sweetness. Loss rather than gain is the result of thus forgetting the specific aim of what is being taught. It is the province of the teacher to discourage — certainly not to cause all such vagrant tendencies which are so natural to young pupils who must learn to follow one line of thought.

A further illustration of the same tendency may be seen in the inability of the pupil to free his thinking from concrete and too specific meanings. The admitted necessity of passing through a concrete stage sometimes blinds the teacher to the fact that an essential distinction between a high order of thinking ability and lower accomplishment is power to deal with abstractions through their symbols. The abacus stage in some form may not be omitted but it should be passed through. Objective methods are indispensable in mastering the elementary combinations, but the pupil who continues to image or count apples, horses, or dollars as he combines addends has remained upon the mental plane of a six-year-old in dragging with him useless concrete imagery. A common and persistent case of this form of arrested development is the pupil who " dots " or counts his fingers in computation; in this instance too long continued dependence upon the tangible has fixed a mischievous and time-consuming habit. It should be the concern of the teacher to see that the pupil

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soon reaches the stage of ignoring the quantities for which digits stand and " juggles symbols " mechanically.

A further illustration of the tendency of a non-essential element of a complex to persist as part of a meaning may be verified by almost any teacher who asks a class to name figures 1, 2, and 3. Because of the position of model figures in most textbooks, as well as the drawings of many teachers, some pupils are nearly always found who insist that figures 2 and 3 are not trapezoids though the three figures are identical.

Figure 1

Figure 2

Figure 3

3. *Studying without recognized plan.* Pupils should gradually become conscious of their method of study. Most investigations show that studying children think of the necessity of freedom from interruption; some consider the importance of looking up unfamiliar terms; a few systematically preview the entire task before taking up its steps; and a smaller number know the value of reflection, methodical review, and organization of what has been studied. All these represent wise procedure and though it is quite possible to practice economical study measures without being able to recognize or explain them, it seems probable that a few hours spent in discussing plans of study would improve the working habits of most successful pupils, benefit immeasurably those who are victims of uneconomical habits, and by degrees develop alertness to discover better modes of working.

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What the form of attack should be naturally varies with the character of the subject matter. If it is a problem or can be stated as one it is well to become conscious of the problem approach somewhat as follows:

(1) Given
(2) To find
(3) Procedure
(4) Verification

or more simply,

(1) What is it that I must do, or find out?
(2) What does the problem (situation, book) tell me?
(3) How can I use what it tells to solve the problem? (Answer the questions, do what is required.)

A variant device consists of writing in one column what is known about the problem; in another what is not but must be, thus directing attention to what is given and what is required. What has been said with reference to suiting the method in recitation to character of subject matter applies equally here.

Use of textbooks in the study period. Economical use of textbooks requires thorough comprehension of their plan and peculiarities of arrangement. Some are faulty in organization, content, and mode of expression. It is an obligation of the teacher to protect pupils from loss owing to these shortcomings; however, complaining of the badness of textbooks in the presence of young pupils who are to study them is a peculiarly unjustifiable action even for a teacher who could make better books. If the pupil takes the teacher's attitude at all seriously he is likely to reason, "If the book is so bad, why study it?"

With the best of books much of the pupils' study hour could

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be improved to better advantage; a few of the wastes which characterize textbook study and suggestions for their elimination are offered here.

1. *Study topics rather than pages or chapters.* Pupils, often the most painstaking, expend energy needlessly in completing formal units of subject matter, such as pages or chapters. Reading a given amount of space may indicate poor conception of the subject or an ideal of finishing anything begun, from a glass of water to a shelf of books in the library. This ideal is a good one but its thoroughness should be transferred to thought units. Pupils must be taught to study what bears upon the purpose, to take the related and leave irrelevant materials interspersed. Close, plodding reading is often an enemy to economical study; much must be judiciously skimmed. Some form of picking and sifting must be devised. With upper grade classes a good device is to require pupils occasionally to take notes of a talk delivered too rapidly for it all to be copied. If securing the essential content of a paragraph or series of paragraphs is the purpose, pupils may practice underlining important statements, placing within brackets those not vital, marking the beginning and the end of the treatment of each topic and preparing marginal headings.

2. *Teacher must know plan and organization of textbook and aid pupils to use helps.* To guide the pupils' study of a textbook the teacher must thoroughly know its plan and direct attention to its organization and study helps. The preface or introduction may have little significance; oftener it has value in recent textbooks but much of the best method material remains safely locked up because teachers fail to read introduction and footnotes. Such material should be

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considered of value until careful examination disproves the assumption. The significance of chapter headings, topic sentences or important statements emphasized by italics, boldface type, or capitals is usually lost upon pupils unless taught to make use of them. The force of the emphasis device is sometimes sufficient to undo itself as in the case of letters so large as to be " read under." As a pupil expressed it, " Those letters were so large that I didn't see that line." Topical outlines and study questions, even when good, achieve little for most pupils unless the teacher directs specific attention to them, and follows such direction by inquiring as to their use.

The better organized a textbook, the more worth while it is to help pupils to an understanding of its plan. They should be shown the relation implied by numbering a series of topics, taught to survey the entire plan of a chapter or topic treated, to be somewhat conscious of the plan of treatment first instead of blindly reading from line to line. For most pupils such guidance will not only result in immediate study economy but exercise strong influence toward well ordered thinking.

3. *Study questions for guidance of pupils.* Study questions for the guidance of the studying class are an effective device. Such questions may be given as part of the assignment, placed upon the blackboard or hectographed, and distributed to each pupil. Most questions in textbooks are much better used for this purpose than for quizzing by the teacher. Such textbook questions vary from those poorly formed to test knowledge of fragmentary facts to excellent thought-stimulating problems, but all are lacking in specific application to any given class or individual. This means that even with the

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best of textbooks the teacher must formulate many study questions.

In addition to meeting usual technical requirements discussed in the preceding chapter, a study question must possess qualities which render it effective when detached from the immediate enthusiasm, magnetism, or driving force of the teacher. Definiteness and the "quality of taking hold" are among essential requirements. To formulate such problems and questions requires a line-by-line knowledge of the textbook used by pupils, and intimate acquaintance with the school and social world of each, since frequently the best of such questions are based not so much upon the textbook as upon relations of its content to the pupil's daily life.

While the study question may require a written answer, it is so easy to overdo the matter of written work that teachers should very often say to a class, "These questions do not call for writing; think them over as you prepare the lesson, and write some of the answers if you think that will help you to understand and remember." Pupils who have fallen into the habit of depending too directly upon the teacher, asking unnecessary questions while they should be solving their own problems, may be greatly helped toward a more independent attitude by being given a list of study questions or directions and told to fight their own battles. If the teacher has prepared questions with proper care, such pupils should be held quite rigidly to doing their work unaided; they will soon develop better study habits, and ability to follow written or printed directions is an accomplishment which the school should give to every child.

To illustrate the type of study questions which some teachers are using with success the following are given:

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Study Questions for Seventh Grade

(Based upon "Columbus," by Joaquin Miller)

Recall the story of Columbus. What kind of ships had he? What were the real dangers? Of what else were the sailors probably afraid?

Read the poem; explain Admiral, mate, mutinous, Gates of Hercules, *gray* Azores.

What single words in stanzas one, two, and three show change in the spirit of the mate? (good, stout, blanched). What words in stanzas one, three, and four show changes in the sea? (shoreless, dread, mad). Was this change in the sea, or in the way it appeared to the men? Find passages like

"Now must we pray,
For lo! the very stars are gone,"

to indicate increasing hopelessness of mate and sailors.

Find other forceful figures like

"The very winds forget the way."
"The sea shows his teeth."

How is the constant courage of Columbus shown by repeated use of a single word in stanzas one, two, three, and four?

Why is light repeated so often in stanza five?

Explain, "He gained a world." What was its "grandest lesson"?

Memorize two stanzas of the poem, choosing those you like best.

Diagnosis of pupils with study difficulties. The first step in helping a studying pupil is to secure an intelligent estimate of his difficulties. Sometimes these are easily discovered and surmounted; with others long and critical observation is needed to make a correct diagnosis and persistent treatment required when the trouble is found. As suggestions to teachers who wish to study the work obstacles of their pupils a few

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diagnoses of pupils who needed special help are given and the remedial measure with its result.

Case 1. Pupil in fifth grade, unable to add accurately. Various hypotheses are made as to the cause of his trouble. (*a*) Perhaps he is excitable or tries to work too fast. No; careful observation shows neither frowning, gripping the desk, nor other signs of undue tension or haste; on the contrary his movements are deliberate and his results not found in less than average time.

(*b*) Perhaps his mind wanders from the column as he adds. But observation shows that he moves up the column quite regularly, without noticeable hesitation or indication that he is trying to keep his place by repeating partial result "26, 26, 26" as many persons do when interrupted. The same observation indicated that he had equally ready knowledge of all elementary combinations, since none seemed to cause delay.

(*c*) Perhaps the process of carrying is imperfectly mastered. This might be expected to show nearly all the incorrect result in others than the first column; but his mistakes occur with about equal frequency in all.

(*d*) Possibly in spite of his ready use of the elementary combinations, some of them "come wrong" occasionally. This proved to be the case, $7+9$ and $7+6$ causing all the trouble. What made these unusually hard to detect was the fact that in adding aloud the pupil usually gave the correct results for these. A few individual drill lessons stressing these two combinations seemed to remove the trouble.

Case 2. Similar to Case 1 except that it was found that the pupil made the peculiar mistake of adding $7+9=26$, $6+9=25$, these two combinations often bringing a result too great by ten.

Case 3. Pupil in seventh-grade reading seldom acquainted with meaning of new words. The pupil was generally intelligent and unusually industrious. Apparently she had abundance of time for study. Investigation showed that she had never learned the alpha-

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bet, which made the dictionary practically a closed book to her. Drill upon the alphabet and its application to the use of the dictionary removed the cause for complaint.

Exercises

1. The usual school term is from eight to ten months in most parts of the country. Granting that the pupil spends half of his school time outside of reciting classes, how many minutes does he "study" in a year, counting five days a week and four weeks a month? How much of this time is he really studying? How much of the time he is seriously studying what has been assigned is spent upon material worthy of such careful attention? Generalizing, how much does the child study and how much of his study is wasted?

2. Many pupils do not know how to study; yet nearly all books and articles upon this subject are of such nature that few pupils can understand them until their study habits are formed. What per cent of the elementary school teachers with whom you are acquainted are able to instruct pupils in the best methods of study?

3. "It often happens that the teacher gets his mind so fixed upon his own plan or his own idea that he is totally blind to anything of value in the plans or ideas suggested by the pupils. If pupils are to be trained, their plans and ideas must be the starting point. They constitute the stock in trade, the raw material with which the work must be done. . . . To be helpful . . . the teacher must be on such terms with his pupils that his presence does not stand in the way of free mental activity. A teacher who frightens his class, who is overserious, or who is sarcastic, will not be able to make much progress in training pupils to study, since his attitude retards rather than accelerates thinking on the part of the class." (Earhart: *Teaching Pupils to Study*, 143.)

Effective supervision of study is perhaps more difficult than

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class instruction as the term is usually understood. In addition to the suggestions of the foregoing quotation what is requisite for successful direction of pupils' study?

4. (*a*) A pupil used the expression, "You should have seen the feathers flew." The teacher told him to write the correct form fifty times after school. Forty-nine times he wrote, "You should have seen the feathers fly," but the fiftieth copy reproduced the original mistake. Asked about the matter next day the pupil replied, "I got in a hurry and forgot."

(*b*) Having difficulty in eradicating the use of "gwine" instead of "going," a teacher required a pupil to write the full conjugation of "I am going, you are going, he is going" in all tenses. He then said, "I think you understand that now, don't you?" "Yes; it looks as if they were all *agwine*."

Account for the failure of the copying device in (*a*) and (*b*). What difference between the two cases? What is the relative value of oral and written drill exercises in overcoming such incorrect usages?

5. As a fine example of social motive for study McMurry mentions a school group who worked industriously in learning to read stories which they in turn read to an old person with failing eyesight. What similar opportunities have you seen utilized in giving the immediate result of study significance outside the schoolroom?

6. A studying pupil read the following statement without being conscious of any contradiction or inconsistency: "A boy was run over by an automobile yesterday and instantly killed. He was taken to the hospital and it is reported that he is making good progress toward recovery." What is the cause of such reading?

7. "Learn, verify, repeat, reflect," was the study motto of Jacotot. Which of the four precepts quoted seems to be most often neglected?

8. Make a list of study questions to guide a pupil in studying a poem; a geography lesson involving use of a map; a history

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lesson in which differences of opinion are easily supported by argument.

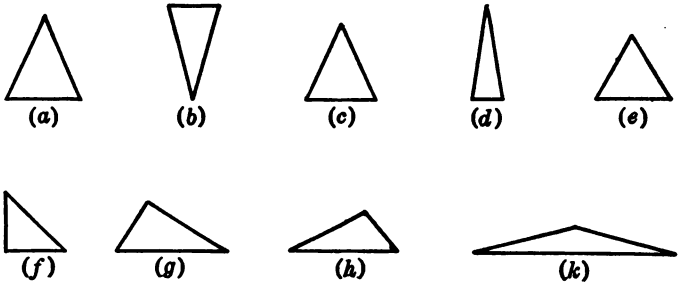
9. Prepare a list of what all pupils of a sixth-grade class in composition or written work should know and practice without question. What would be the effect upon classroom economy of keeping such a list before the class with the understanding that all should do independent work with reference to points covered in the list, asking the teacher no questions? As examples of questions which such a list might forestall, the following are mentioned:

(*a*) How do you spell ——?

(*b*) Shall I begin —— with a capital?

(*c*) Shall I indent here?

10. Draw figures like the following upon the blackboard and ask pupils to find all the isosceles triangles.



It is probable that figures (*a*) and (*c*) will be selected at once, and that some pupils will omit others properly included or even argue that they are not isosceles triangles. How do you account for incorrect answers? Make a similar experiment with other geometrical forms.

11. To what extent would training pupils to study geography help them in studying arithmetic? History? Spelling?

12. Classify your pupils as those whose study difficulties are due to (*a*) poor retentive powers, (*b*) inability to read, (*c*) inability to concentrate, (*d*) the handicap of a very narrow or abnormal

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home environment resulting in poverty of ideas and vocabulary, (*e*) physical defects.

13. Some textbooks are poorly written. Common defects are poor organization, failure to make essentials stand out in bold relief, use of words too difficult for pupils, and crowding into a single paragraph many slightly related thoughts. Find examples of these and other defects in the texts you use. What can the teacher do to avoid waste and loss of interest due to each of these?

14. From the standpoint of study, should arithmetic answers accompany each problem, be placed at the close of the textbook, or be omitted entirely? What would be gained by having answers given as limits between which the correct result is found?

15. Select at random five pages of a textbook used in an upper grade class and determine which words will need explanation or use of the dictionary.

16. Which of the textbooks you are teaching or studying contain useful method suggestions? Study questions with an energizing grip?

17. Select five arithmetic examples or problems which would probably cause pupils difficulty owing to the way in which they are expressed rather than because of any mathematical obstacles presented.

18. What is the objection to giving a class the following instructions?

(*a*) Study the lesson ten times.

(*b*) After you have read your second-grade lesson through, read it backward.

19. Replying to the question, "Is home work (study) for school children to be recommended?" nine out of ten of a large number of teachers answered "Yes" and the rest said "No" or were uncertain. How would you answer any of the following arguments which are listed in the order of their frequency among those not favorable to home study?

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(*a*) Five hours of school work daily are enough for any child.

(*b*) Home conditions are frequently unfavorable.

(*c*) Too much dishonesty; pupils do not do their own work.

(*d*) Proper supervision of this work entails too much of the teacher's time.

(*e*) It tends to careless writing.

(*f*) It discriminates against the child whose home environment is unsuitable.

(*g*) The work is done by those who need it least.

(*h*) Fatigues pupil so that his proper rest and recreation are reduced.

Which of the following would you consider most practicable in eliminating the need for home study?

(*a*) Have study periods before and after school hours.

(*b*) Have smaller classes so that teachers can give individual instruction, thus eliminating need of home study.

(*c*) Use bright pupils to assist dull ones.

(*d*) Reduce requirements so that pupils will not need to study except during the regular school day.

20. By private individual inquiry ascertain the opportunity for study at home of all your pupils. Consider light, freedom from interruption, parental encouragement and coöperation, and other factors which your inquiry may soon discover. Tabulate the results so as to show inequality of home study conditions.

21. Give an example of work suitable for home study

(*a*) because it represents application of principles already learned;

(*b*) because it possesses a gripping interest likely to insure sustained effort;

(*c*) because it contains material which might prove interesting to the home circle of many pupils, thus extending school influence by brightening the lives of adults.

22. A pupil divides his twenty-four hours about as follows:

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sleep, ten hours; school session, six hours; meals, errands, play, seven hours; home study, one hour. What effect upon this child has an assignment of such a nature that he must study four hours in order to complete the work in the given time? Granting that the assignment is impossible of complete and thorough performance, which of the following courses of action would you expect him to follow?

(*a*) Lose sleep in an endeavor to comply;

(*b*) Hasten through the assignment, doing slipshod work and by this means "getting over" if not getting through with the lesson;

(*c*) Spend a reasonable time upon the assignment and later explain to the teacher that the task given was unreasonable.

(*d*) Hire some one else to do part or all of the work. (Depend upon parents.)

23. In a school organized departmentally, that is, with a teacher for each subject, it was found that several teachers often made heavy home study requirements on the same day. Being spasmodically overworked pupils were sometimes worried. To remedy this bad situation a weekly schedule was arranged by which only arithmetic was assigned on Monday, geography on Tuesday, and so on through the week, one subject each day. What would be the merits and defects of sending home for study but one subject a day in the school not organized departmentally?

Readings

Bennett: *School Efficiency*, XVII (Home study).
Colgrove: *The Teacher and the School*, XX.
Hall-Quest: *Supervised Study*, IV–VIII.
Horne: *Story-Telling, Questioning*, III.
McMurry: *How to Study*, II.
Strayer: *The Teaching Process*, VIII.

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CHAPTER IX

MEASURING THE WORK OF THE SCHOOL

Necessity of measuring results. The essential purpose of every school is realized in the results it produces in the lives of its pupils. Of necessity, these children are not able to measure thoroughly the teacher's success; teachers and officers are not sure of the effects of their work, or are sometimes uncritically too sure and resent the suggestion that the school must be held strictly accountable for results in proportion to material placed in its charge, much as are other social agencies. But late or soon society must and does evaluate the work of our schools; measured by the ever increasing expenditure allowed for education, its judgment has evidently been that they justify their trust.

In the enlarging functions of the modern school our work should be so well done that every opportunity to make a case will be welcomed; all proposals to test or measure results are at least looking in the right direction. It is but reasonable to object to some of the methods used; we must apply critical judgment before accepting all the implications of insecurely established standard tests — in a word "survey the surveyors" — but no professional teacher should be found opposing the idea of more intelligent and accurate means of determining results in education.

Difficulty of measuring results. Unfortunately measuring results in education is much less simple than making com-

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parison with profit-making economic undertakings. The school is not conducted because the community expects financial remuneration; the family does not rear children because they pay. The support of education, like the duties of parenthood, is part of a vague but very real "ought" which renders service to the community and the state. Because of the peculiar relation of the family as the producer of society and the school as the institution for transmitting its cultural possessions, the final value of either is bound up with nothing less than the end or goal of society itself — a subject of debate among philosophers from the beginning of time. A shoe factory tests well if its output is *good* and produced with minimum waste of time or material. "Good" means that the shoe must be comfortable, more or less in style, and of long wearing quality. In turn each of these characteristics may be defined and measured.

By no such simple analysis can the work of the school be estimated. The infinite complexity of elements which have influenced each child in school is equaled only by the unmeasurable influences which he may exert; thus the success or failure of his education cannot be determined even within the span of a lifetime. Similarly it may not be possible to measure finally the success of a school system owing to the fact that, with all immediate efficiency, it may be leading an entire nation in a wrong direction or toward inevitable disaster. Not only are many results of education long deferred, but some of the most important are now and perhaps must always remain undiscoverable by those instrumental in bringing them to pass.

Educational results to be measured — ideals and attitudes, habits, knowledge. 1. *Ideals.* However, it may contribute

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to an understanding of this very complex problem to outline briefly the elements of education in which results must be achieved. Reduced to its lowest terms, education has often been said to consist of ideals and attitudes, habits, and knowledge.

The first of these, ideals and attitudes, with appreciation, are clearly the guide and inspiration which move to action. An ideal has been defined as "seeing one's self as he wishes to become." No less important than the habit is the ability to see favorably and choose the honest, industrious, neat, true, or beautiful. One who has only the habit of being honest or neat might show faultless conduct in accustomed situations, but in a new, changing, or problematical environment or difficult stress only deliberate choice dependent upon an ideal proves effective.

Not only do ideals control in situations involving moral deliberation and plainly requiring *yes* or *no* decisions, but the belief that one is equal to great things, an habitual attitude of being successful is one of the surest foreshadowings of success itself. Complete self-respect, enthusiasm for generous or noble conduct in friend or foe, "large" ways of considering affairs — these as ideals are a vital part of what the school should give. The direction one is going is of more importance than his speed or knowledge of the road. Yet in spite of their fundamental value ideals and attitudes are very difficult to reduce to any standard of measurement.

2. *Habits.* Habits or habit systems are to serve in that great majority of our actions which must be performed over and over again. Speed, accuracy, and inevitableness are the essential qualities. The first two are easily measured in such formal subjects as spelling, writing, and the mechanics of

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calculation. If the automatic element is established inevitably it makes this evident by persisting when thought is occupied elsewhere. Thus it is possible to test the effectiveness of a pupil's spelling or writing habits by means of papers written in language or geography, or his oral expression by watching him upon the playground or in animated conversation. It is much more difficult to determine the degree to which intelligent use will be made of automatized actions. The pedant is *habitually* vaunting his little capital of information; the "educated fool," because of habit bonds, unprofitably associated, is unable to turn loose the proper bit of his learning when it might apply.

3. *Knowledge.* Knowledge, the third element which the school must develop, may, like habit formation, be tested, but it is frequently not possible to determine the increase of knowledge within a given time or due to school activities. And whether it be considered a matter of knowledge or habit bonds which make what is learned available, no test gives assurance that learning will be recalled and applied when needed.

The foregoing discussion should be sufficient to make clear the elements of education which it is the school's business to develop — knowledge, habits, ideals, and attitudes. School measurements, next discussed, apply in varying degrees to the first two; reliable means of measuring the others have yet to be discovered.

The school's estimate of its own work. Notwithstanding the impossibility of determining final results and the finer values in education, the school must have for its own guidance estimates of the degree to which it is accomplishing its proximate aims. If pupils in one room read more readily or add

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more accurately than those in another, it is worth while to look for the causes, perhaps in teacher, methods employed, or time devoted to the subject. If one pupil is retained in his grade and another promoted, the difference in placing the two depends for its justification upon some kind of measurement. Because of its own necessities, the school has several ways of measuring results in pupils. These may be broadly listed as (*a*) the unrecorded judgment of teachers, (*b*) recorded estimates known as marks or grades, (*c*) examinations, (*d*) educational measurements, standard tests, and scales. These in turn will be discussed.

1. *Unrecorded judgment of the teacher.* The free and unrecorded judgment of the teacher is of all means the most flexible and universally applicable in estimating attainment or progress. When used with or checked by more objective procedures next discussed, it is also the most reliable. But as a rule the teacher's judgment is highly subjective and affected by a multitude of unrelated influences. The pupil who does well the first few months of school has increased probability of being thought strong, merely because of the inertia which gives an opinion stability. It is easier to take the already formed estimate of a child than to keep reëstimating him every few days.

Unconsciously the teacher reads into the work of a pupil with good reputation excellence which the work itself does not possess, and by the same process reads out of his indifferent classmate's attempts values to which another might be less blind. Not only is he likely to be mistaken in his estimate of individual pupils, but he may have lax standards of what the room or grade as a whole should accomplish. Optimistic teachers frequently say, "My classes are doing fine work,"

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and thoroughly believe the statement although pupils are by no means putting forth maximum efforts; they do willingly all that is asked but are not stimulated to great enough exertion. It is evident that mere opinion of the teacher is variable and that a more impersonal and constant plan of estimating results is needed.

2. *Marks or grades.* Marks, usually numbers or letters, are generally used in estimating results. These may be based upon the teacher's judgment or upon various other tests of which they become the record. In rating pupils' written work, especially before the teacher becomes familiar with handwritings, a fairly objective estimate may be obtained, the work alone being measured. But if the teacher knows whose paper he is marking, it is often found that the name of the polite or persevering little pupil has counted more than the work itself, and that the mischievous or impudent lad has been marked down to what is expected of him. If one unacquainted with the class is asked to mark papers, the teacher may usually detect room for modifying at least some of his own marks through studying the cases upon which the estimates diverge. Aside from such subjective and irrelevant influences, other questions soon present themselves in the use of marks. How often should they be recorded? What notation should be used? What after all do they mean? These will be discussed in succession.

a. How often should marks be recorded. Daily marking of every pupil is fatiguing and slavish; if, in addition, standing is recorded in the presence of the class or after each answer to a question, the entire effect is deadening to all concerned. On the other hand, marking at uncertain or long intervals gives too much weight to casual or accidental conditions. The

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pupil who had done well upon nine days might be rated upon the tenth when he failed. A safe plan is to go over the list of pupils at least once in four or five days, making sure each has been given an active part in class exercises, and recording standing according to his performance. Questions are often asked for which answers cannot reasonably be expected; care must be exercised that ratings are based upon reasonable expectations. A thoughtful estimate of each pupil, recorded at intervals of a few days, will secure the reliability of daily marking without its tedious and wasteful grind.

b. Notations used in marking; letters and per cents. To the second question, relating to a suitable notation, practice has given numerous partly satisfactory answers. The only universally understood system in this country is that of per cents, preferred by children because it seems more definite, and by parents because they are accustomed to per cents in other fields and wrongly fancy they understand a child's report card bearing a ninety per cent mark. Popular understanding of per cents, if it were more enlightened, would be an argument in their favor, though letter systems in some European countries have, through uniform and long-continued usage, acquired as generally intelligible meaning.

The principal objections to per cent markings are that they direct attention toward the absolute rather than the relative standing of pupils, further discussed in relation to the meaning of marks, and they easily lend themselves to unprofitably fine distinctions, unsatisfactory for teachers and pupils alike. The difference between marks of 89 and 90 is difficult of explanation to rival pupils; except in a few types of formal drills, few teachers would argue that such minute differences are to be reliably determined. This troublesome feature

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may be avoided if only the per cents ending in 5 or 0 are used, 70, 75, 80, 85, 90, 95, 100. If this is done, there is much similarity between per cents and letter notations in common use, A, B, C, D, E; E, G, M, P, F (Excellent, Good, Medium, Passing or Poor, Failure) or E, S, M, I, and F (Excellent, Superior, Medium, Inferior, and Failure).

Before leaving the subject of per cents, it is but fair to note that they possess a minor advantage of speaking more eloquently in the case of those whose work is unsatisfactory. If "F" represents failure, it is applied to the one whose work is almost passing, the same as to one who has hardly started in the race. The nearly passing pupil at 55 per cent and the rank failure of 15 per cent sometimes hardly seem to belong in the same group.

c. Giving marks a meaning. In reply to the third question concerning the meaning of marks, it has been indicated in another connection that they should be the measure of a single attainment or quality. Allowing deportment or poor penmanship to affect a pupil's mark in history is confusing unless it can be shown that illegible handwriting prevented accurate expression of his thought. But granting that marks are not thus obscure in meaning, many teachers have vague or incorrect notion of their significance. "Ninety per cent means ninety per cent of perfection," says one who thinks he has believed this during a teaching career of twenty years. Clearly such a statement is nonsense in most subjects. If used in estimating work in geography, history, or literature, we may ask what perfection is in these subjects. Is it the same for the fourth grade as for the sixth? If perfection is the standard, how does it happen that a half dozen teachers often give to the same paper as many different marks, ranging

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from fifty to ninety per cent, meanwhile agreeing rather consistently as to which papers are best and poorest in a given group? Instead of the absolute standard it is far better in most subjects that marks should be considered relative. A pupil then given a rating of 90 per cent is simply regarded as stronger or better in the subject than one who receives 80 per cent, not nine eighths as strong, just as a mark of "E" indicates higher rank than "M."

The sanest plans of marking are those which throw pupils into relatively large groups according to rank of attainment. Unless a teacher has appraised the work of two pupils clearly enough to state the particulars in which one is superior to the other, he has no right to make a difference in their marks. It is lazy autocracy to fall back upon the *ipse dixit* of undefined impression, refusing to explain to a pupil wherein he has fallen short. On the other hand, it would be difficult, as well as entirely useless, to give the exact ranking of each pupil in a class of forty. This constitutes the principal argument for grouped marking such as we usually associate with letters. In the typical class there are a few excellent pupils, a larger group not quite so strong but above the average, and a large number of average strength. Below average is a fourth group and usually a few whose work is decidedly unsatisfactory or failing.

The standing of most pupils is such that it is comparatively easy to classify them in one of these five groups for each of which a letter is used. Assuming that five marks are used, how many should reasonably be expected to receive the highest mark, the lowest, and others between? Very tall persons or very bright children are comparatively scarce; the same may be said of very short, lean, and impolite or stupid persons.

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Fully one half of all the people we know are not conspicuously tall, short, or possessed of any other qualities in an extreme degree. It is at least reasonable to suppose that pupils' attainment in a typical group of children would not differ greatly as to the distribution of excellent, superior, average, inferior, and failure cases from most other phenomena. As an illustration, it would probably be safe to award in a typical class of thirty about the following numbers of each mark:

Excellent	1
Superior (good)	7
Medium (average)	15
Inferior (poor)	6
Failure	1

Several in the group of course might deserve and receive the excellent mark, or so might none of them; all might be average pupils and there might be many or no failures. It would prove exceedingly unfortunate for any one to assume a fixed distribution or rule as to how many marks of each quality should be awarded in a given school group; if several hundred pupils of about the same age or grade are considered, it may be apparent that the distribution would probably apply.

Basing marks upon rank instead of some fancied or uncomprehended perfection standard helps to eliminate the results of temperamental differences in teachers. One with sanguine but uncritical attitude awards a majority of pupils the highest rating; another who is overcritical or desirous of winning a reputation for rigid requirements seems to delight in a multitude of low marks. The result is that for the same quality of work widely differing records are made. High marks are " cheap " in one case and " dear " or not available

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in the other. Such extreme differences are perplexing to children and parents. If a change of teachers occurs a pupil may be rated "superior" one month and "inferior" the next, no one being conscious of any corresponding change in zeal or performance. It is even conceivable that children in a departmentally organized school might be misled as to their own special aptitudes. If William constantly receives "Excellent" in arithmetic and "Medium" or "Inferior" in geography, does not that prove the presence of special mathematical talent?

Any teacher who awards an unusually large number of high or low marks should be sure he is dealing with an unusual group of pupils. It might well be added that extremes, designed to indicate excellent attainment or failure, should be used sparingly. In cases of doubt, safety usually lies in giving too many average rather than an excess of high or low ratings. On the other hand, easy-going teachers are exposed to the danger of reasoning that giving average marks to all is easier than knowing pupils' attainment well enough to discriminate. If all teachers used marks more consistently and positively as a means of estimating and reporting results, they would have a much greater value.

So far as the incentive value of marks is concerned a teacher might consistently argue that "passing" and "not passing" were the only marks necessary since ideally at least pupils do not work for marks. Such argument is seldom valid in thinking of marks as a notation used to estimate attainment. It is a rare occurrence to find all pupils of a class doing even approximately the same quality of work. The variation in degree of excellence usually extends from failure to performance with which little if any fault can be found.

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3. *Examinations.* Examinations constitute the third means of testing results. In spite of adverse criticism they persist because their values outweigh their manifest defects. Naturally they cannot well become the favorite exercise of pupils but there is no excuse for making them unnecessarily distasteful by holding them before pupils as grim monsters to be reckoned with. The doubtful practice of excusing brighter or more industrious pupils from an examination if they attain a given mark has the effect of branding it as an unpleasant experience. Typical objections to examinations are the following:

(*i*) They interrupt the educational process, much as pulling up a young plant to determine its rate of growth might interfere with its development.

(*ii*) Examinations are accused of causing needless strain upon children, resulting in such phenomena as cramming, loss of sleep, and cheating.

(*iii*) They do not test important results; ability to cram is measured, and this quite fortuitously, since it is impossible to cover all the ground with any set of questions. A pupil who has been so fortunate as to prepare one fourth of his lessons from which questions are chosen makes a better showing than his more diligent classmate who knows thoroughly the three fourths from which no questions happen to be selected.

(*iv*) Pupils do not like examinations.

As sometimes conducted, examinations are open to the foregoing and other objections, but skillful handling should remove most of their shortcomings. They should be made to serve as a *teaching* expedient, their testing function not unduly obtruded; they should be clearly worth while and so far as

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possible dissociated from the idea of promotion, in this way not being a serious interruption to work nor the cause of needless strain. So far as cheating is concerned, occasional cases will occur, often unthinkingly or " to get ahead of the teacher " more than for any other purpose. The moral standards of children in the lower grades should not be put to the strain of being placed upon honor; older pupils may be brought gradually to the moral level which recognizes the wrong of this form of stealing, and the inherent beauty of being independent. In relation to the claim that children dislike examinations it would be strange if they did not after all the extreme statements in pedagogical discussions of the subject. Perhaps if teachers were more careful in using examinations, there would be less of such criticism; it is quite possible that many pupils do not " hate examinations " until thus told that they should dislike them. Furthermore, to plead childish disfavor is not convincing argument; children often express extreme dislike of serious or steady employment, plain diet, and similar parts of a regimen which promotes healthy growth.

Teaching and testing being combined in the best use of examinations, it may be noted that they act as an incentive for additional study and more thorough organization and give opportunity to see relations of large units of subject matter. They reveal defective preparation or incorrect notions of pupils, which " follow up " lessons may complete or correct. Examinations also detect misplaced emphasis, omitted content, or improper presentation by the teacher. If half a class fails in a reasonable examination, the instructor is nearly half a failure. If only two or three are unable to pass, the fact remains that, so far as these are concerned, the educational

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purpose has not been realized. If no one could have done better such failures are not a discredit to the teacher, but one who has secret pride in the fact that children cannot pass his examinations does well to study the various meanings of such an attitude and condition; in examining the attainment of a class under his instruction the teacher is giving his own work a rating.

4. *Standard tests and scales.* The desire for a still more objective means of measuring results has led to the elaboration of numerous "standardized" tests and scales, and students of education are constantly adding to the list. The most satisfactory so far devised measure habit formation in drill subjects, especially penmanship and arithmetic. Useful scales are available for measuring other subjects in a degree, and enthusiastic exponents of the educational measurements idea believe that eventually attainment in all branches may be gauged quite accurately; others are skeptical of the possibility of developing practical means for measuring language, geography, history, art, science, or literature. There can be no doubt that the "scale idea" has done much to bring about more critical estimates of what schools are doing; intelligent recognition of more thorough drill upon the most accurately measured fundamentals has been one result. The principal advantages presented by such scales and educational measurements are the following:

a. Standard tests and scales represent actual attainment. They are based upon established norms representing actual performance instead of crudely derived notions expressing uncritical opinion. Instead of arbitrarily or dogmatically saying that pupils of the eighth grade *ought* to write as well as a given sample, it has been found by studying many

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thousands of cases that handwriting of eighth-grade classes in most good schools has an average not far from quality eleven of the Thorndike scale. Instead of *thinking* that the same pupils should add or subtract a given number of examples in three minutes, the adding and subtracting record in thousands of eighth-grade classes has been found.

b. Standard tests and scales are objective and can be widely applied. Such standards once established may be universally applied. It thus becomes possible to compare achievement of children of a given age or grade in any school or system with those in other schools, no matter how far away they may be, or what system of marks may be employed. Grade rooms or school systems greatly below these established standards in performance may endeavor to find local excuses but it is hardly feasible to protest that standards so thoroughly confirmed are too high.

By the same tests, overlearning in the teacher's favorite subjects may sometimes be detected and more attention directed to other branches not so well taught. Again, since the standards and scales are fixed measures, it becomes possible to use them in an absolute sense, determining for example how many pupils in the sixth-grade write more poorly than should be expected of fifth-grade or fourth-grade children. To state that a pupil writes or adds as well as is expected in the third, fifth, or sixth grade conveys information not found in a mark of A, B, C, or 90 per cent. By means of such measurements it becomes a simple matter to state absolutely what kind of work is being done or to measure improvement, since the standard does not change.

c. Use of scales steadies teacher's estimates. The scale or standard idea once established, teachers find their markings

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considerably steadied by making their own scales in subjects for which no generally effective ones have been worked out. A very practical application is found in composition; after extensive study a few compositions of sufficient excellence to merit a high, average, or low mark and intermediate qualities at will may be selected as standards by which to measure others. The question to ask is not whether the composition judged resembles the standard but whether it is as good. Even in marking examination papers or estimating written work of any kind, a teacher can very profitably choose samples of the best, the poorest, the average, and perhaps one or two intermediate qualities, and use these for constant comparison through the series, instead of trusting to chance groupings which may lead to uneven standards. To illustrate, after reading ten very poor papers, one of medium quality seems much better than the same paper would after reading ten of the best. By occasional reference to papers regarded as standards it is much less difficult to maintain uniformity of judgment. This plan necessitates looking over several papers before any marks are determined — a safe precaution in most cases.

d. Distinction between teaching and testing value of measurement scales. In using educational measurements it is essential that a clear distinction be made between their teaching and their testing values, just as in the case of examination. A writing scale composed of specimens of handwriting varying from very poor to excellent and including all styles of penmanship has no value except for testing; it is not a teaching instrument and should not be kept before pupils since no one wishes them to imitate the poorer qualities, various styles, or the peculiarities of individual penmanship. A similar statement holds with regard to sample compositions.

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Spelling scales composed of word lists lose their testing value if they are deliberately used as spelling lessons, but as a means of securing interest in spelling they accomplish a teaching purpose. One who has never heard of the "Hundred Demons of English Spelling" and spells the hundred words correctly may well be rated as good in spelling; on the other hand, the pupil who spends months learning to spell all words of this list alone may nevertheless be poor in spelling.

e. Achievement of room or class more important than high individual records. It should also be suggested that the achievement of rooms or grades is of importance rather than that of single pupils. Knowing the rank or status of his room, it is for the classroom teacher to make individual measurements which may assist in securing stronger work. As an illustration, rapidity of writing in schools where the subject is effectively taught conforms approximately to the figures in the accompanying table; great variations from these rates should cause critical study of every element of the situation.

Grade	Rate of Writing Number of letters per minute at close of the year
Second	20 to 30
Third	25 to 35
Fourth	35 to 45
Fifth	45 to 60
Sixth	60 to 75
Seventh	75 to 85
Eighth	80 to 95

If the writing rate for the room proves low, this may be due to a rather general condition affecting nearly all pupils, or

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some may be writing too rapidly while a majority need increased speed. It is not important nor probable that all can achieve the rate expected of the *grade*, since pupils differ greatly. It *is* important that the teacher should realize that the *room* shows a low standard, since differences are not so marked among classes of the same grade; the per cent of slow pupils in a dozen eighth-grade classes may vary but little. Most rooms or classes may be brought to the standard established by measuring other groups of the same grade; many individual pupils cannot attain this standard.

f. Teacher's coöperation in developing educational measurements. The advantages to be derived from an extension of the standard test idea are so evident that the intelligent teacher's attitude can only be favorable. It is wise also to be intelligently critical of measurements proposed, since many are of little practical significance. The application of objective and mathematical measurements to educational results is in an infantile stage. Coöperation in using and developing such standards is a reasonable expectation of every professionally minded teacher.

Promotion as a resultant. In determining fitness for promotion all the four means of measuring results are of value, but very large scope must be allowed for use of the teacher's judgment. The attitude toward promotion should be *prospective* rather than *retrospective*. There is essentially but one question in regard to placing a pupil for the next year: "Considering all the circumstances, will he receive more by remaining another year in this grade or by spending the time in the next?"

Among "all the circumstances" which teachers should use in answering the question are marks, results of examinations,

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and educational measurements, though no one nor all of these can be the deciding factor. The pupil's age, size, mental ability and application, physical energy, temperament, health, home environment and associates, like or dislike of certain teachers, and other factors must enter into the estimate. It is the pupil's time we are using, so much limited that it must be employed most advantageously even though his scholarship may be rated as a failure; some never actually "pass" in the work of any grade, but they are and should be promoted. In no great number of cases will looking ahead for the pupil's welfare result differently from looking back over his achievement. The pupil promoted before completion of minimum requirements in fundamental subjects finds it difficult to get his bearings in a field where all is new and unfamiliar. "Place the pupil where he will receive most benefit" usually means that he is kept where his preparation entitles him to be.

Exercises

1. Since the word "grade" is used to denote years in school as well as symbols, letters, and per cents indicating pupils' standing in class, what objections can be raised to employing "mark" instead of "grade" when referring to the latter use?

2. After several weeks' observation, rank the pupils of a room or school according to their importance upon the playground or in the social life of the school. Compare your ranking with their standing as indicated by the marks upon their report cards.

3. Comparing the marks of pupils is not a difficult matter if per cents are used; with letters a practicable plan is to substitute arbitrary numerical values for each mark. In the accompanying cases find the average standing of the group and of each individual

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by using these equivalents: E, 10; S, 5; M, 0; I, minus 5; F, minus 10.

(A)	M	M	M	S	S	M	M	F	M	S	M	S
(B)	S	S	S	M	E	E	E	S	S	S	E	S
(C)	I	M	M	I	I	I	F	M	M	M	S	I
(D)	E	E	S	S	S	S	M	M	M	S	S	M

4. A teacher gave a mark of F (failure) in oral expression to a pupil who stuttered. He reasoned that he could not possibly give a higher mark, since, in order to avoid exciting this pupil and rendering his speech defect more conspicuous, he had given him no oral work. What should the teacher do in such a case?

Some teachers give their pupils very low marks during the first months of the term and gradually raise them toward the end of the school year. What is the justification for such a practice?

Many teachers refuse to award the mark of 100 per cent to any pupil in any subject. Are they right? What arguments may be advanced in support of this custom?

5. After estimating a half dozen examination papers in a content subject and recording the mark of each, ask several other teachers to rate the same papers. Account for the differences in rank and in general level of the marks given.

6. How would you prove the truth or falsity of each of the following?

(*a*) Teachers mark the examination papers, not on the pupil's ability to think but upon his ability to reflect the teacher.

(*b*) The teacher is more likely to mark the examination paper 98 per cent because he rates the pupil's ability high than he is to estimate the pupil's ability higher because he has received a good mark upon his paper.

7. To reduce tension or haste during examination and to insure the greatest fairness

(*a*) Allow pupils to choose a certain number of questions out of a given list.

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(*b*) State that pupils will be rated upon whatever they have time to complete, a perfect mark being given as readily for seven answers as for ten.

(*c*) Have examinations at the completion of topics rather than at fixed intervals such as once a month.

(*d*) Estimate papers as a whole rather than upon the basis of a given number of points per question answered.

(*e*) Conduct examinations and tests unannounced and, if possible, without knowledge upon the part of pupils that they are being tested.

State the arguments either for or against each of the foregoing suggestions.

8. A pupil before examination said, "I haven't the least notion what any of the questions will be." Granting that pupils should have at least a general idea of the probable questions, estimate the value of each of the following devices:

(*a*) Post fifty review questions, promising to select five or ten examination questions from the list.

(*b*) Have pupils make up lists of "examination questions."

(*c*) Announce definitely what the questions are to be.

9. Discuss the following attempts at telling how to point off decimals (*a*) with regard to the pupil's knowledge of the matter and (*b*) in relation to the mark you would give such answers written by a sixth-grade class: (Copy of actual school work.)

(*i*) There are so many places in the multiplier and you add your top number and bottom number together and place the destimel.

(*ii*) count the number in the multiplyer and the multum and add, then count the places in the answer and place the decimal point.

(*iii*) Point of A many numbers in the answer as there are numbers after the decmel point in there are in the multiplier and the multiplicand for your decimal point.

10. A pupil wrote upon examination:

"Sixty gallons make one hedgehog."

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"Fragments is the smell of a flower, like a rose."

"Three Scruples equal one drink
Eight drinks equal one ounce."

Account for the mistakes. Did this pupil know more or less than one who made no attempt at defining these terms?

11. Marking of pupils' papers so conscientiously done by many teachers is considered hard and uninteresting work; in addition, pupils are often indifferent, throwing away returned papers with little or no heed to corrections. Evaluate each of the following as means of securing better results:

(*a*) Marking fewer mistakes and making educative comments in specific detail.

(*b*) Requiring papers to be corrected and returned to the teacher for inspection.

(*c*) Having pupils correct each other's papers. Note that this plan offers opportunity for needed repetition upon the part of pupils who are merely slow, and stimulates study of corrections since pupils readily challenge each other's markings.

12. Sometimes a standard of form can be adopted by teacher and class, which sets forth minimum formal or mechanical requirements of written work in all subjects. The following is suggested as an example:

1. Penmanship must be as good as —— (quality No. — of Thorndike, Ayres, or other writing scale, or as samples posted in the room).

2. Not more than one word in a hundred misspelled.

3. Periods, commas, question marks, hyphens, used correctly.

4. No capital letters omitted and none used out of place. A paper which falls below any of these requirements may be returned merely marked "Returned; standard two, or three." This gives the pupil a guide for making his corrections.

Devise suitable standards for each grade of the elementary school.

13. The following is the record of an oral and silent reading test indicating the number of words read per minute:

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	October Record		May Record	
	Oral	Silent	Oral	Silent
Gladys	116	174	125	184
Helen	147	244	140	268
Ralph	163	336	190	340
Charlotte	143	329	170	368
Leland	81	165	75	171

Find the average increase in rate of oral and silent reading. Which made the greatest gain? Make a similar test of the rate of reading in your school at intervals of several months. (To avoid the influence of accidental errors find the average of *three* minutes' reading of each pupil.)

14. Handwriting tests including nearly one hundred fifty rooms in a city school showed the following averages in the number of letters written per minute of memorized material:

	Slowest Room	Fastest Room
Fifth grade	39 letters	83 letters
Sixth grade	47 letters	93 letters
Seventh grade	45 letters	97 letters
Eighth grade	46 letters	101 letters

What do such wide *room* differences indicate? Find the average rate for your school and the rate for each pupil.

15. Have pupils spend exactly fifteen minutes copying prose of average difficulty which does not include conversation. Collect the papers and count the mistakes, noting only the following: spelling, punctuation, capitalization, uncrossed *t*'s, undotted *i*'s, misplaced words, word added, word omitted, wrong word used. Tabulate the mistakes to discover which each pupil is most likely to make and the average number of all for each pupil. (A "strong"

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eighth grade showed an average of three; a "poor" eighth grade sixteen.)

16. Collect all the written work of three consecutive days during the first month of school and mark each paper upon its neatness. Keep the papers. Three months later repeat the performance and compare the markings given. How many pupils show improvement in neatness? How many are less neat? Has improvement been among those most or least in need of it? What changes in your own standards may be discovered by a study of your marks on the two sets of papers?

Readings

Bagley: *Classroom Management*, XV.
Ballou: *Improving Instruction Through Educational Measurement.* N. E. A. Report 1916, 196–203.
Chapman and Rush: *Scientific Measurement of Classroom Products* (Scales and tests).
Brown and Coffman: *How to Teach Arithmetic*, V (Marking papers).
Judd, C. H.: *Measuring the Work of the Public Schools.*
Strayer: *The Teaching Process*, IX.
Strayer and Norsworthy: *How to Teach*, XV (Measurements).

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CHAPTER X

ATTENDANCE, RECORDS, AND REPORTS

The necessity of regular attendance. Regular and punctual attendance is essential to satisfactory school work. Teachers waste the time of pupils who attend regularly in the kindly but hopeless attempt to keep up to grade those whose attendance is full of interruptions. The pupil himself after repeated disappointing efforts to gain comprehension of material which cannot be understood without experience of the yesterdays which he has missed, sinks into the discouraged attitude of one who dimly perceives that school activities have a meaning not for him. It is cruel injustice to permit or needlessly cause a child to be absent so frequently that he little knows or cares what the school is doing.

For the child who might otherwise never start to school most states provide a compulsory attendance law, but in many communities enforcement is so lax that, once started to school, habitual absence upon the part of many pupils, with its attendant tragedies, causes no excitement. The community which maintains a school has no right to be satisfied with its performance unless all to whom compulsory law applies attend regularly; certainly attendance of less than ninety per cent cannot be looked upon with complacency.

Parental responsibility for attendance. Aside from the school itself delinquent attendance may for convenience be attributed to the parent or to the child. Fortunately most

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parents are willing to undergo privation or actual hardship in order that their children may attend regularly. It is the unusual parent who is so short-sighted or grasping as deliberately to choose his own comfort or a few dollars earned by children rather than school advantages. Most fathers and mothers who detain children at home do so because they lack appreciation of everyday attendance — the habit of going to school. There are still many persons who in childhood went to school irregularly and but a few months in the year. To such it may seem that a few days lost from a term of eight or ten months leaves a liberal margin of advantage over the schooling they enjoyed. The crop to be saved, the errand, the visit to a neighboring town, are immediate and loom large; educational results grow slowly and imperceptibly. "Fodder time comes but once a year; please excuse James," is typical of excuses used by well-to-do parents, sincerely interested in their children's development, but inconsistently thoughtless of the results of such a course of action.

If these parents knew that interrupted attendance gives the child scattered chapters of a continued story, intellectual bird-cages for which there are no birds, roofs to houses never built, they would realize the significance of constant presence at school. It is part of the teacher's work to educate this class of parents to the serious meaning of occasional absence, which no zealous educator can afford to excuse by assenting to the inferred statement, "A few days make no difference." So far as the weak or indulgent parent is concerned who says of a ten-year-old child, "Willie didn't want to go to school and I didn't (couldn't) make him," thus implying that he expects his child to do nothing not immediately pleasing, little can be said. The world has to do much of its work

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when it would prefer to play; the school is a serious undertaking which has to be continuously followed, regardless of moods or passing fancies.

Pupils' responsibility for attendance — Truancy. In so far as the pupil is the cause of irregularity of attendance not justified, we have the problem of truancy. Ninety-five per cent of all truants are boys, fully eighty per cent being between the ages of eleven and fourteen inclusive. One careful study estimates the causes of truancy as follows:

Fault of home	29%
Dislike of school	26%
Bad company	20%
Fault of boy	11%
Desire to work	10%
Illness	4%

These per cents are probably typical. Nearly all these causes may be transmuted — the boy may dislike school because of home influence, he may have fallen into bad company because of home or school, or desire to work because school has become distasteful. By no reasonable computation can the school itself be responsible for more than half of the truant cases, but it is doubtless accountable for too large a proportion. The vigilant teacher seeks to learn the cause of dislike for school, removes unnecessary affronts to juvenile liberty, even grants special concessions, but cannot assume responsibility for all the errant tendencies of boy vagrants impatient of restraint and entirely unconstrained except during school hours.

Means of stimulating attendance. *a. Vital interest in school work.* From the teacher's standpoint the primary

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means of securing regular attendance is to do work of such superior quality that parents and pupils will feel that absence represents real loss. Under influence of a strong personality in rural and village communities the school sometimes achieves such a position of first importance that little or no urging is required to secure the maximum of attendance. Minor prizes for perfect attendance influence small children; competitions between schools or rooms are capable of arousing interest. Such devices may be very closely linked with school activities and made to appeal primarily to group rather than individualistic instincts. To be proud of one's school or a room with a fine record is distinctly in advance of pride in a prize or badge for attendance.

b. Requiring excuses for absence. Requiring excuses from parents for every absence is a measure generally employed in graded schools. As a check upon truancy it serves except when excuses are written by generous companions of truants or by the culprits themselves. Many excuses sent by parents are hardly acceptable. "Please excuse James because of illness," although James is known to be playing with the ball team or skating on the pond during the time for which he is excused, does not satisfy the teacher who knows that the boy needs every day in school. "Please excuse Mary owing to a social engagement" is too often repeated because Mary has too many such engagements and so neglects her school duties. "Excuse Tom because I need him to work" from the largest property holder in the community raises the question whether the law ought to allow Tom's father to need him so often as to ruin his interest in school. The provisions and enforcement of the compulsory attendance law next discussed should be made clear and strong enough to leave less doubt

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in the mind of teachers as to what constitutes a valid excuse.

c. Compulsory attendance laws. Compulsory education laws usually preceded laws upon compulsory attendance in the development of our state systems. It was apparently believed that if every local community were compelled to maintain adequate school facilities, attendance would take care of itself. Generally speaking, such confidence in educational interest has been justified, but for the laggard tenth compulsory attendance laws have been enacted. Having provided at an immense cost opportunity for free education, the state insists that all must go to school. Compulsory laws, long opposed as socialistic or out of harmony with the American ideal of freedom, including the right to grow up in ignorance, now meet little opposition, much less perhaps than if such laws were relentlessly enforced. The inconveniences which might arise by taking the law seriously are mollified in small communities where enforcing officers have numerous relatives and wider personal acquaintance, making strict law enforcement of any kind improbable.

Most compulsory laws require attendance during a period of years within prescribed age limits, as eight to fourteen, unless the pupil has completed a certain minimum of studies. As schools are now organized, it is evident that requiring specified accomplishments of all children would not be practicable since only absurdly low attainment could be reached by some; on the other hand, such laws, by making special provisions for their education, would compel the school more generally to take account of a considerable group of subnormal children who can gain very little from any amount of attention in the regular public school. Nearly every teacher has had

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his work increased and made discouraging by the presence of pupils who merely occupied space or presented almost insuperable disciplinary problems. If these unfortunate children are required to attend, it should be for their advantage and without the loss their presence causes in the usual public school.

3. *Tardiness as a problem in attendance.* Tardiness as a problem in attendance is sometimes as annoying as frequent absence. The moral significance for the pupil of habitually arriving a few minutes after the appointed time or becoming indifferent to the interests of others kept waiting is more serious for him than the loss of his own time or the instruction he has missed. The " habit of being late " is bad enough to require vigorous measures for its correction. If the child tardy at school is prompt in all other relations, something wrong in his attitude toward the school is indicated, but it is usually the one from the dilatory, unsystematic home who causes the most trouble. The coming of age and the development of certain families may be traced by the tardy marks in teachers' registers. Tardiness, like absence, often requires education of parents for its elimination.

The child with a defective time sense should not be depended upon to hear the bell or start himself to school. If it is a case of loitering on the way, the enticing influence of daily opening exercises has been found effective. During winter weather, when short days increase immeasurably the probability of tardiness, no defective heating apparatus or slowness of janitor service should give to the child reason to picture an hour or two of shivering in a cold seat while the schoolroom is reaching a comfortable temperature. Generally speaking, it is better to depend upon the attraction of a live school than to

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exert other force. One writer suggests an occasional spanking to increase punctuality among small pupils; using such measures, there would surely be danger that the child would make the wrong association. "School is the place where I am spanked; I must for that reason hurry and be on time" ends in a conclusion some would not reach. If any spanking is required, it might be more productive of results if administered at home.

Occasionally punctuality is made a fetish — rated out of all proportion to its real importance. It should never be considered such a disgrace to be a few minutes late that the pupil chooses a day of idle absence instead. Circumstances may occur in which it is better to be tardy than to slight more important obligations.

A form of tardiness sometimes found in rural and village schools is that of permitting pupils to spend entirely too long a time in reaching their places after the signal for assembling in the schoolroom. Responsibility for this cannot be shared with the home as in the case of tardiness strictly construed; the teacher alone is accountable for such useless waste and encouragement of dilatory habits. The common expedient of ringing two bells, the first a five-minute or "get a drink" bell, should be universally followed; when this is done, promptness in getting into seats or at work should be rigidly insisted upon.

4. *Records and reports.* The secretarial or clerical work of the teacher includes keeping records and making reports to school officers or to parents. Both should be accurate, correct in form, and kept with the least possible expenditure of time. A few general suggestions are made relating to performance of clerical duties.

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a. Economy and accuracy in keeping records and making reports. Records of attendance and scholarship should be kept up to date; falling behind and depending upon memory results in uncertainty, inaccuracy, and increased labor. To insure accuracy and economy a definite time should be reserved for taking the attendance. To call the entire roll, requiring each pupil to report "present," is foolish waste of time after the first few days or weeks. Names, faces, and seating once learned, a glance over the room is sufficient to discover the absentees. In order to keep the record intelligently the teacher must know the law or custom concerning school holidays, half and quarter days' attendance, and withdrawals. Alphabetical order in all lists of names should be maintained. In the long run this proves economical, and it is surprising that so many teachers have not adopted such arrangement more generally in their work.

Anything worth recording or reporting should be registered accurately. Many report forms call for items which are a check upon each other. Thus the number of days taught, total number of days attended by all pupils, and average daily attendance must be consistent, since from any two the third may be computed. It is always humiliating to be found incorrect in reporting such items because it seems to indicate a doubly careless attitude. The per cent of correctness among teachers' reports is scarcely as high as might be expected from persons who are so constantly emphasizing the importance of accuracy. "I never received successively ten correct monthly reports," says a county superintendent. "Though directions are plainly printed upon all our blanks and I have been emphasizing the matter, arrangement of names still indicates that a fourth of my teachers have never learned or

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at least cannot use the alphabet," a city superintendent remarks. It is part of the teacher's work to master clerical technique so that reports may be made neatly, precisely, and with economy of time.

b. Reports to school officers. From daily records kept in the school register or on attendance cards reports must be made. Failing to realize their importance teachers sometimes regard these as a burden. Many items called for seem trivial, — not closely related to the real things of education. The number of cases of absence is less significant than the total hours of serious attention pupils pay to worth-while instruction, but the former item we can measure and the latter we cannot. By means of reports comparisons may be made which reveal the effectiveness of such attendance measures as are adopted.

Since we have no way of estimating more directly what the school does for the pupil, it is necessary to reckon his contact with school education in terms of bodily presence, assuming that this will roughly correspond with the degree of his attainment due to school activities. Even when a good reason cannot be found for a report required by law, nothing is gained by faultfinding delay. If the useless report must finally be made, the sooner it is in the hands of those legally designated to receive it, the sooner the teacher is free to devote attention to more significant duties without the impending sense of an unpleasant bit of routine postponed.

c. Reports to parents. Unsatisfactory experience with report cards of the conventional type has led to their abandonment in some schools. The chief objections alleged have been that they do not give fathers and mothers information about the progress of their children; that they are mis-

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understood; that parents are indifferent to them, often affixing their signature without reading the report. In lieu of reports, some schools send home specimens of the pupil's written work, a good device occasionally, but not one which can replace other means. Such " samples " place the burden of judging upon many parents not capable of discerning good from poor in school attainment. If the pupil writes very much better than any of his near kindred, his papers are likely to seem quite satisfactory.

The teacher knows better than any one else whether proper progress is being made. Further, representative specimens cannot be sent except in subjects which can be reduced to writing or shown in a constructive project. The difference between copied material and the pupil's own work is not always evident to parents.

Instead of issuing reports one school publishes this statement: " No regular report cards will be sent parents. So long as no reports are sent, parents may know that their children are doing satisfactory work. Use the telephone frequently or come to school if you want detailed or special information." This plan frees teachers from a considerable amount of clerical work, and, if understood by parents, has much to recommend it. Reports being less a matter of course should correspondingly command increased attention from the parents of children not making a success of their school career.

If reports are sent to parents, care should be taken to overcome the objections to them which have been mentioned. The card usually employed is too small to include more than the merest statement of the pupil's standing. This much should at least be truthfully and unmistakably set forth so

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that the parent may learn whether his child's work is of passing or failing quality and whether its rank is near the upper or the lower end of the group with which he is classed. It has been intimated in the chapter on estimating results that many teacher's marks have in themselves little meaning. Reports to parents are much more effective in enlisting coöperation of the home, which is their chief purpose, if in addition to marks information is added giving specific reasons for defective or unsatisfactory work and suggesting ways in which the home may help to make it better. The following, taken from the "remarks" column of the large cards issued in one school, are typical of what may be included.

Oral Reading. Defective in expression and lacks readiness. Reading aloud at home would help. The teacher will gladly select and send home suitable books from the school library for this purpose.

Arithmetic. Difficult because he still does not know the multiplication table. Should practice 7 times 9, 8 times 7, and 8 times 9.

Remarks. (General.) Often forgets work assigned for preparation at home. Please remind him of this, for he seems willing and capable. Frequent absence has broken into his work.

An interesting device for enlisting home coöperation is the use of a report which calls for parents' estimate of home tasks in addition to the teacher's report of school standing. The teacher signs the report from the parent and the parent that of the school. Sometimes the two reports are averaged together, thus in a sense giving the pupil school credit for home duties well performed. More directly, credit is sometimes given in certain school subjects for projects completed

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under parental supervision, the pupil meanwhile keeping a systematic record which is presented to the teacher and approved. As an expedient to catch the interest of fathers and mothers and to vitalize instruction in subjects which lend themselves to such connections, school credit for home duties and projects has sometimes been very effective. When carried to the extreme of excusing a child from lessons in a much-needed subject because she has washed the dishes, or raising a boy's scholarship record because he has split the kindling or cared for the horses, there is a danger of cheapening school work. School experiences are at least supposed to be selected because of their educative value; home tasks imposed upon children are often only of economic significance, mechanical and uneducative except in the sense that any duty faithfully or exactly performed has an undoubted moral value.

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Exercises

1. What are the principal reasons for non-attendance among children of school age in your community? What provision is there for enforcing compulsory attendance?

2. Unsatisfactory parental attitude toward attendance may be classified as indifferent, lax, indulgent, or selfish. How may each of these attitudes be changed and parents educated concerning the importance of regular attendance?

3. Find the average daily attendance and the per cent of attendance of the school represented by the accompanying section of a school register.

Names	M	T	W	T	F	*	M	T	W	T	F	*	M	T	W	T	F	*	M	T	W	T	F	*
Aley, Robert		E				4						5						5						
Clark, Charles	E			×	×	3	×	×	×			2						5						
Cluney, Mary	E					5						5						5						
House, Kittie	E			t		5			t			5		t	t			5						
Hoyt, Ray	E																			×				
Myers, Minnie	E																			×				
Simmons, Eugene	E	×			×			×						×	×									
Wellman, Scott															E					/		\		

Explanation: E, entered; / absent morning session; \ absent afternoon session; t, tardy; * total for week.

4. Where would you place the blame if pupils tamper with reports sent to parents or forge parents' signatures?

5. Suggest remedies for the following misunderstandings of teachers' marks.

(*a*) A parent found fault because his son was not promoted although his report cards showed no marks in basal subjects below 70 per cent. He supposed this was satisfactory, but was informed that 80 was the passing mark and that an average of 85 was required.

(*b*) Parent was alarmed because child's marks were very low.

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He consulted the teacher, who reassured him, saying with a little pride, "He is one of the best in the class; I never give anything but low marks."

(*c*) A pupil complained because he was not promoted in spite of the fact that every mark on his report cards throughout the year had been of passing grade. The teacher explained that he had been given these marks partly because he tried so hard.

(*d*) A teacher dreads the approach of each month's end because report cards must be issued and the pupils always complain about their marks, saying unkind things about each other and about the teacher.

(*e*) A sixth-grade pupil received a mark of 87 and was scolded at home for not making a better record. His brother in the fifth grade received 93 and was complimented upon his standing. As it happened the sixth-grade pupil had the highest mark given in his class, while the fifth-grader's mark was below the average for his room.

6. Give reasons for each of the following suggestions concerning reports to parents and add others of your own.

(*a*) Avoid complimenting a pupil on account of native ability or censuring him for lack of it.

(*b*) Always read twice, or have another read, comments upon a report card sent to parents, in order to avoid anything which might be misunderstood or give offense.

(*c*) Use few superlatives in reporting a pupil's progress. "One of the best" and "there are none better" are much safer than "the best in the class"; they are also more accurate in many cases, since it is not always a simple matter to determine preëminence of a single pupil.

Readings

Bagley: *Classroom Management*, V.
Snedden and Allen: *School Reports and School Efficiency*, II–V.

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CHAPTER XI

THE TEACHER AND EDUCATIONAL STATISTICS

The purpose of educational statistics. The application of statistical methods to the study of educational problems is becoming more and more general, and a slight appreciation of such studies should be the possession of every teacher. A flippant remark attributes the invention of statistics to the devil; they are said by persons but slightly acquainted with their value to be dry and uninteresting; many teachers say they are hard to understand and apparently make little effort to comprehend them. But one who has this attitude should remember that we owe much of modern progress to painstaking, exhaustive, scientific use of statistics. What is merely assumed to be true becomes established fact, and problems which are too general or involve too many instances for reliable conclusions from individual experience are solved by this means.

Briefly, the purpose of using statistics is to bring to bear upon any question under investigation a very much larger number of cases than mere observation, however wide, can call to its support. Scientific investigation, by their use, becomes the enemy of superstition, exaggeration, vague conjecture, jumping at conclusions, and fixed beliefs which rest only upon meagerly established traditions. In all social fields many accepted beliefs and practices have been taken

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for granted rather than demonstrated as wise or best; some of these would defy any method of proof yet devised and maintain their place unquestioned; upon others there is a difference of opinion which can be settled only by extensive investigation. A few examples of educational questions and measurement which can by this means be settled beyond reasonable controversy may be mentioned by way of illustration.

A common experience of alumni and former students returning after a period of years to the school previously attended is to find those now in school younger than their classmates of earlier days. They *seem* younger and more immature because, much more than he thinks, the observer's maturity and wisdom have come to him since leaving school. Statistically it is easy to find the truth of the matter, which often does not agree with general and unmathematical impression.

How do compulsory attendance laws affect the amount of illiteracy? The answer of mere observation varies from that of the optimist, in the law-enforcing community, to the opinion of the pessimist, where little heed is given to the law. The correct answer can be given only by state or nation wide statistical studies extending through many years. Such illustrations should be sufficient to show that without the use of statistics by *somebody*, guiding and controlling our school systems would be impossible; plans for the future can be made intelligently only in the light of statistical evidence concerning needs, costs, and results in the past.

Of recent years statistical methods have been applied to many problems closely related to the work of public school teachers. Studies made by research students of education and the school surveys which have recently formed so large

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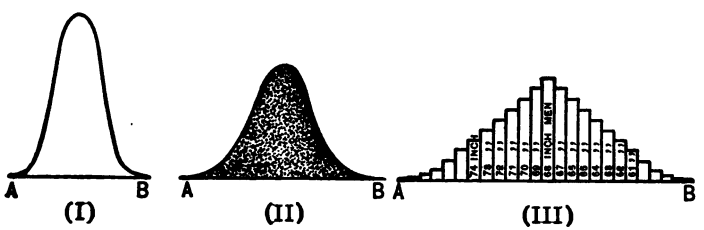
a portion of current educational literature have great interest for teachers with an elementary knowledge of statistical terms and methods. With better understanding teachers may widen their interest in professional reading and see new meanings in the reports and investigations for which they are so often called upon to supply the original data. Intelligent coöperation in filling out blanks has many advantages over apathetic, mechanical compliance with routine orders. The teacher who has an appreciation of a few statistical studies finds less irksome the laborious details which form the raw material of new researches. To aid in developing such an intelligent interest, untechnical explanations of terms commonly used but not universally understood by teachers are given in the following pages. Normal curve of distribution, mode, and median are discussed in succession.

The normal curve of distribution. The normal curve of distribution, or probability curve, without cumbering the explanation with any mathematical language, is a bell-like figure, represented in the accompanying drawings.



THREE FORMS OF THE NORMAL CURVE OF DISTRIBUTION.
(All three represent symmetrical distribution.)

The *area* of the figure represents the distribution of cases of most natural phenomena and, it may reasonably be assumed, of mental traits and attainment. The meaning of this

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will be most conveniently understood through a concrete illustration. Suppose that each of the thousand dots on the surface of figure II represented a man selected at random from all the men in the country and arranged according to their height, the tallest at A, the shortest at B, and the remainder ranging between these extremes. If the thousand happen to be exactly typical of all men in the country and we ignore measures of less than an inch, it will be found that the largest number of cases represented in the middle of the curve are about 68 inches tall; above and below this height an equal number are 69 and 67 inches respectively, with 70, 71, 72, 73, 74 inches in a decreasing number of cases continuing the series above and 66, 65, 64, 63, 62, 61, below the middle point (Figure III).

This is, of course, only a graphical way of showing that by far the most men are of average stature and the number who are taller or shorter decreases according to the degree of variation from the average. It is well to bear in mind that this symmetrical distribution may be assumed with almost absolute certainty if a very great number of cases be considered. Likewise one must constantly be on guard against applying the probability curve idea rigidly in thinking or measuring which involves small groups. Five or ten men of great stature *might* be met in succession as one walks along the street, but a hundred or a thousand men would be sure to include many of average height and a few who were very small. All pupils of a small class *might* be very bright; perhaps no very large class ever failed to include some who were mediocre or even inferior in ability.

Application of normal curve of distribution. The normal distribution illustrated in the example given may reasonably

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be supposed to apply in all mental and social fields. No matter what the quality, it is safe to presuppose many cases not far from average and few extremes. In most grades a few pupils are very young, a few much over age, and the great majority not far from normal age. Such examples of distribution according to the probability curve could be noted almost without limit in school relations. A teacher who thinks out carefully the meaning of the normal curve has a guide in steadying his estimates of pupils. Most classes or rooms have a few excellent pupils, approximately the same number of very little ability or attainment, and a great middle group ranging between these extremes. If teachers' marks correspond to or indicate relative standing at all accurately, it is unlikely that a large per cent of pupils will be awarded either very high or very low marks. It is almost equally unlikely that no extreme cases will be found in large classes. Exactly balanced distribution should not be universally expected; a " strong " class would show an unusual number of high marks, a " weak " class of low. This phase of the subject has been discussed in the chapter upon testing and estimating results.

Quartiles and quintiles; mode; symmetrical distribution. Some further definitions with illustrative examples are given. If we begin at A in the preceding illustration and count the tallest, or at B with the shortest, until a fifth, a fourth, or a third are included, the area embraced is called quintile, quartile, or tertile respectively.

A " symmetrical distribution " means that an equal number of cases occur at any given point below or above the middle of the series. In the accompanying symmetrical arrangement, the number of cases 5, 10, or 15 per cent below 80 is equal to the number 5, 10, or 15 per cent above 80.

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Number of Cases	Marks
1	95
2	90
4	85
7	80
4	75
2	70
1	65

The quality of which there are the greatest number of cases is called the *mode*. In the series just noted 80 is the mode. If there were also seven cases of "65," the series would be called "bimodal" — having two modes.

The median. The median quality is that above and below which an equal number of cases occur. The median quality in the illustration is 80, the eleventh case counting from above or from below falling within the group of seven rated at 80. The median is usually not far from the average, with which in this case it exactly coincides.

1. *Advantages of median over average.* Certain advantages in the use of the median have led to its very general adoption instead of the more familiar average. As will be shown, it is more easily computed if the number of cases is very great. And while nearly the same as the average in many instances, it sometimes represents tendencies more accurately. Thus the average wealth of ten men owning property valued respectively at $10, $10, $10, $10, $10, $10, $100, $100, $1000, and $1,000,000 is somewhat more than $100,000; the median amount is $10. To say that the average fortune of the group is $100,000 is misleading, since this is ten thousand times the proper figure for the majority of those considered; to speak of the median fortune as ten dollars represents the

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financial condition of most of the group. "As a rule these men have about ten dollars" is a more reliable description than "The average fortune of these men is more than $100,000." Distribution is often of more consequence in arriving at an estimate of conditions than any other factor.

A familiar example showing the misleading nature of averages is found in statistics of teachers' salaries. In many tabulations superintendents' and principals' salaries are included in computation. Note the inaccuracy involved in interpreting the statement "The average salary of our *teachers* is $67.31" in reference to a small system employing

1 Superintendent	at	$200 a month
1 Principal	at	150 a month
4 Principals	at	100 a month
20 Teachers	at	50 a month

Of this group the *median* salary is fifty dollars a month. The average may be correctly given, but the unskilled reader of the statement is likely to acquire the erroneous notion that most teachers are receiving nearly seventy dollars. Of course greater accuracy would result from separating the salaries of administrative officers from those of regular teachers, but educational statistics contain many such defective groupings, in some of which fallacious conclusions become apparent to one who uses medians occasionally instead of accepting inferences based upon averages.

A pupil whose marks are 80, 80, 90, 80, and 10 is more accurately characterized as one who usually receives about 80 (median 80) than one whose average in 68, since accidental and quite unusual circumstances may account for the single departure from his accustomed standard. In measuring the

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attainment of all pupils in a schoolroom or system, the standard reached by the majority is of greater significance in estimating the effectivenes of instruction than remarkably high or low efficiency upon the part of an exceptional few. This the median shows, only slightly affected by extreme cases.

2. *How to compute the median.* The median is found by arranging all cases in a series according to the quality being measured and then counting from either extreme until the exact middle of the series is reached. Even when computation is necessary, only arithmetic is involved, and this of a type requiring accuracy rather than knowledge of a complicated process. To assist teachers in learning to compute medians examples are worked out and explained in the succeeding paragraphs. For the majority of persons the most economical mode of mastering such processes is to solve each example while it is being studied and then to make similar problems based upon familiar conditions related to school work.

Number of Cases		Mark
3 Pupils	received	98
12 Pupils	received	93
8 Pupils	received	88
1 Pupil	received	83
7 Pupils	received	78
10 Pupils	received	73
4 Pupils	received	68
2 Pupils	received	63
Total 47		
Mode 93		
Median 83		
Average 82.36		

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The total number of cases is 47. The median quality is evidently that above and below which 23 cases are found. Counting cases from above and from below this is found to be 83, the median mark of the group. This illustration is rendered simple by virtue of the fact that the cases are already arranged in a series, and because there is but one case of the median mark.

3. *Discrete and continuous series.* Before considering the next example the distinction between *discrete* and *continuous* series will be explained. To one who has given the matter little thought there seems to be slight difference mathematically between saying that ten pupils spelled correctly eighty words out of a hundred, thus receiving a mark of 80, and saying that ten pupils received 80 in handwriting or language as measured by a scale. In the first instance, which represents measuring in a *discrete* series, the pupil receives credit upon an absolute scale for exactly what he has done. If he spells eighty words correctly, his mark is 80; until he spells the eightieth word his mark remains 79; it will be 80 unless he is able to spell another, in which case his mark becomes 81. The mark 80 evidently includes the space from 80 to 80.9999... since no matter how nearly he may spell the next word he adds nothing to his mark until he actually does spell it correctly.

A discrete series is much like a flight of stairs: one remains upon a given step until he is able to take the next. Among ten pupils receiving the mark 80 in spelling some may have been barely able to spell eighty words; others could almost spell eighty-one. In such *discrete* series only counting the number of correct cases is necessary; all results are either correct or incorrect. Computation in arithmetic, ability to

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remember lists of names or words, are other examples of school work in which the number of correct or incorrect cases accurately determines standing. In a series thought of as *continuous* the question is not that of correctness or incorrectness but of *relative* quality. The pupil who says four plus two equals seven is not considered more accurate than his classmate who gives the result as eight or nine; all are wrong and worthy of no credit.

But if one is judging the quality of handwriting, no specimen is correct or incorrect, though one is superior to another. It is not difficult to imagine that a thousand specimens might constitute a series, arranged progressively from the poorest to the best, in which no two were of exactly equal merit. Such critical ranking of handwriting samples would have no practical value; instead, scales are used including ten or a dozen quality samples to which all may be referred. Some may be slightly below or above the quality to which they are assigned, but are nearer to this than to the next step. If a specimen were clearly better than quality fourteen and inferior to fifteen, the only problem is to determine which it most nearly approaches. If the decision is that it is nearer quality fifteen, this means that if rated exactly, it would be above *fourteen and one half*. Likewise " nearer fifteen than sixteen " might reasonably be thought of as between fifteen and fifteen and one half. It may thus be seen that all between fourteen and a half and fifteen and a half (15.4999...) in a continuous series could be rated as quality fifteen. Ten samples of handwriting, for example, rated as quality fifteen might be, if more accurately estimated, 14.6, 14.7, 14.8, 14.9, 14.92, 15, 15.1, 15.3, 15.35, and 15.4. In measuring qualities which may be thought of as forming a continuous series, each step includes

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half the intervals immediately below and above the exact quality indicated by the mark itself.

Generally speaking, it is well to think of a teacher's marks as based upon a continuous rather than a discrete series; since it is impractical to give each case an exact rating, every mark is made to include some who receive slightly more than a mathematically exact estimate would entitle them to and about as many a little less. In most types of work it is not a question of exactly right or exactly wrong but a matter of relativity. Since it is necessary to know whether a series is considered discrete or continuous before the median can be accurately established, a restatement of the meaning of a mark in each is given by way of summary.

If the series is considered *discrete*, as in marking spelling lists, which are absolutely correct or incorrect, "15" includes 15.00 to 15.999....

If the series is considered continuous, as in estimating the quality of handwriting, relatively, "15" includes 14.50 to 15.499....

4. *Finding median in a continuous series.* In the illustrative example next given, the measurement of handwriting in all the eighth grades of a small city is tabulated. The entire 735 cases should be thought of as forming a continuous series; each quality listed includes samples below and above it in excellence, but nearer to it than to the scale quality above or below. The total number of cases being 735, it is evident that the 368th case from either extreme includes the median quality, which is that of the middle point in the series, 367.5. Counting from the lower end of the series, 40 plus 70 plus 90 plus 70, it is found that 270 cases are below quality eleven. This leaves 97.5 cases to be taken before

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the median 367.5 is reached. Since there are 200 cases of the eleven quality, $\frac{97.5}{200}$ of the interval beginning at 10.50, the lower limit of quality eleven, must be added to 10.50 to find the exact median quality. This amount — .4875 — being added, shows the median to be 10.9875. The same result could have been found by subtracting $\frac{102.5}{200}$ from the upper limit of quality eleven, 11.4999....

Number of Cases	Quality	Inclusion of Each Quality Considered as Continuous Series	
40	7	6.5	7.499
70	8	7.5	8.499
90	9	8.5	9.499
70	10	9.5	10.499
200	11	10.5	11.499
100	12	11.5	12.499
60	13	12.5	13.499
56	14	13.5	14.499 ...
34	15	14.5	15.499 ...
12	16	15.5	16.499 ...
3	17	16.5	17.499 ...
Total 735 Cases			

Handwriting measured by Thorndike scale. Median quality 10.9875.

5. *Abridged process of finding median.* As was stated, it is less laborious to find medians than averages if many cases must be considered. In the illustration just used mere inspection would be sufficient to warrant the assumption that the median is somewhere in quality ten, eleven, or twelve. It then becomes unnecessary to estimate papers below or above these qualities further than to make sure of this inferiority or superiority. This being safely established, such papers need no further study; they are merely counted

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below or above the range in which the median probably falls. The series thus abridged becomes

200 cases below quality 10
70 cases quality 10
200 cases quality 11
100 cases quality 12
165 cases above quality 12

Familiarity with such measurements renders it possible to locate the median very accurately by approximation, thus reducing the necessity for most of the tabulation, if only the median is to be found. A still more accurate estimate in this illustration would have assumed at once that the median was located in the eleven quality. This greatly abridged series would be

270 cases below quality 11
200 cases quality 11
265 cases above quality 11

The work may be still further abridged by use of a formula, but additional discussion would extend beyond the purpose of this treatment, which is to explain the use of the median and an easily comprehended method for its calculation.

Study of statistical methods and terms worth while for teachers. The advantages to a teacher's thinking of studying the topics treated in this chapter are sufficient to justify great effort in their mastery. After working through the illustrations and the exercises at the close of the chapter, the same methods of measurement should be applied to such problems as retardation scholarship marks, scores in standard tests, and attendance in the school where one is

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working. The resulting clearer comprehension of what is being accomplished, understanding of similar studies made by others, and a willingness to coöperate in furnishing materials for statistical tabulation, even when their purpose is not fully understood, will quickly prove that time spent upon such discussions does not deflect energy from the universally demanded responsibilities of the schoolroom itself.

Exercises

1. Name some phases of school work which you think cannot be statistically measured. Why are they not measurable? Name some educational questions not yet settled which in your opinion may sometime be settled by statistics.

2. The accompanying "age-grade" table shows the number of pupils of each age in every grade of a ward school. Numbers representing children of normal age are underscored; those younger are "accelerated," those older are "retarded." Thus in the fourth grade there are thirty-one of normal age, one is accelerated, and five are retarded.

Age	6	7	8	9	10	11	12	13	14	15	16	17	Totals
Grade I	27	8	2	1									38
II	1	20	7	2	4								34
III		2	23	5	3		1	1					35
IV			1	26	5	1	3	1					37
V				5	24	7		2	1				39
VI					1	19	9	2	2		2		35
VII						4	24	9	2	1	1		41
VIII							1	20	9	1		3	34
Totals	28	30	33	39	37	31	38	35	14	2	3	3	293

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Find the per cent of retardation and acceleration in each grade and in the school. Compare the average with the median age in each grade. Make a similar age-grade table for a school with which you are acquainted.

3. Find the median and average rate of handwriting in the intermediate grades of a school system as indicated by the accompanying data. Make a graphical representation to accompany your study.

Number of Cases	Letters per Minute	Number of Cases	Letters per Minute
1	40	125	62
6	46	93	63
12	49	88	64
20	50	82	65
21	51	37	66
25	52	98	67
36	53	45	68
50	54	51	69
51	55	35	70
62	56	22	71
71	57	28	72
121	58	23	74
90	59	9	75
94	60	1	77
113	61	1	86
		2	91

4. Find the average, median, and modal age of the pupils in your schoolroom.

5. Estimate your vocabulary — the words of which you have at least some understanding — by ascertaining how many words you know upon every fiftieth page of a dictionary and multiplying the resulting average by the total number of pages in the book. How accurate would this estimate be? Form a similar estimate upon the basis of ten other pages selected at random. Compare the two estimates. What is your conclusion with regard to the number of

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cases it is necessary to consider in order to secure a fairly reliable estimate?

Readings

Snedden and Allen: *School Reports and School Efficiency*, I.
Thorndike, E. L.: *Mental and Social Measurements*, 7–27, 32–41.
See also references at close of Chapter IX.

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CHAPTER XII

THE TEACHER

The importance of the teacher. The value of every school depends primarily upon the teacher. With palatial buildings and magnificent equipment no community has an effective school if the teachers are of indifferent ability. On the other hand, superior, if not the best work is possible in spite of inadequate physical conditions and meager supply of every teaching accessory if only the teacher is the right person. While the fact has been emphasized throughout that the character of the child the home furnishes determines the product of education more than anything the school itself can do, such is the power of personal influence that pupils daily become what their teachers are. The teacher who is nervous, nagging, stupid, obstinate, or superficial invites discord and reflects his objectionable qualities by mere presence; one who is normal, vigorous, alert, sympathetic, or thorough carries the spirit of energy and coöperation.

When all schoolrooms are supplied with teachers of such wholesome influence, children will "go to school and not be sent — or sentenced" — as is now the case in too many schools and less potentially excellent human material will be spoiled. Far more significant than any contemplated changes in the curriculum is the supply of excellent teachers, since the teacher is the curriculum. Imagine a lesson taught by the finest teacher

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of your acquaintance and then picture what the poorest teacher you ever knew would do with the same material; how willingly and profitably pupils attend in the first case! How kind nature must be not to permit utter ruin for those who must endure the second! If we seriously purpose to develop pupils into useful units of society, furnish schools, and compel attendance, what economy can justify selection of any except capable and inspiring teachers?

Character and selection of the teaching force. 1. *Effect of adverse criticism upon the supply of teachers.* For the all-important work of teaching, what kind of persons does society select? The answer may be given from many angles. "The teaching profession is filled with uneconomic women and quiet-loving men," says one writer. Foreign visitors to our schools find teachers the least satisfactory element in our educational structure, while American students of European schools agree essentially that only in their teaching corps do the schools of the older countries excel ours.

The compensation of teachers, known by common observation to be low, has sometimes been proved by extensive investigations to be less than is paid to skilled tradesmen or even unskilled laborers, and the inference is sometimes drawn that the state does not care much who teaches its children or it would offer better inducements. Studies of teachers' salaries, exhaustive as some may seem, frequently are misunderstood (as are many of the other uncomplimentary statements about the status of the teacher), and one consequence of so much uncritical publicity is that young persons of energy and ambition are loath to enter teaching or welcome the first opportunity to escape a profession which is said to offer so little. Perhaps too loosely uttered pronouncements that teachers

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are usually poorly trained and paid proportionately exercise a depressing influence upon the craft spirit of those who think too much of a teaching career to give it up.

Instead of accepting adverse generalizations about the teaching profession it is wiser to scrutinize such statements with extreme caution. To begin with, most conclusions based upon comparisons between teachers and other professional groups are rendered unreliable by the inclusion of a multitude who are not professionally trained — a group not found in the professions usually employed by way of comparison. To compare those in community influence, financial remuneration or recognition of any other sort with physicians or lawyers is misleading. If only teachers of thorough preparation are included in one's thinking, it will be found that in refinement, salary, or general social significance discrepancies are not so glaring. Teaching, though not a richly rewarded profession, is furnishing a satisfactory career to thousands of well-qualified teachers who suffer few of the inconveniences we are likely to associate with the lower levels of the service among the immature or unqualified.

2. *Need of awakening sentiment for better teachers.* While it may directly help teachers very little to hear the shortcomings of the profession reiterated, it is eminently desirable to bring home to the public generally the necessity for having only strong, well-trained teachers. In some parts of the country, especially among rural and village schools, we have accustomed ourselves to a low level of teaching ability. Some communities measure all educational events in comparison with some long ago when a real leader was in charge of the school, and others have never had a thoroughly good teacher with which to compare a long succession of the more or less

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unsatisfactory. In a general way all agree to the need of proper qualifications; in concrete, specific, personal situations we are not shocked at "I know she is not a good teacher, but she will do for that room," or "A is not as good as B, but she will work for less money and there are only *little* children in school this year"; or "She is only sixteen, but no one else has applied." When there is a prospect of very inferior teachers for his own children, the average American citizen is likely to become educated to the universal need of more effective service, but our social intelligence upon the subject is not yet widespread enough to achieve results commensurate with the importance of the problem.

Teachers have been accused of talking too much about their own salaries. Naturally patrons and voters generally consider those with which they are acquainted and arrive at the conclusion that a small number are not well enough paid, a few receive entirely too much, — poor teachers always do, — and the majority are given about what they earn or they would not teach. Such a course of reasoning is quite justified, but it ignores the vital *school* issue. The ultimate purpose of increased compensation is not so much to augment the remuneration of the present teaching force as to induce a better qualified group to take their places in response to increased salaries — the natural economic consequence. When a community takes its educational problem seriously, and intelligently seeks an improved teaching corps, the use of more money usually proves to be one of the most effective means of bringing results. If we become intelligently earnest in relation to education, those who are too young and ignorant of life or too old and unsympathetic will no longer be teachers.

3. *Need of more intelligent and effective selection.* In addi-

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tion to a larger investment in the teaching force more effective agencies must be developed for selecting, training, and inspiring teachers for their chosen work. In this country perhaps, the first of these functions is least effectually performed, with the result that much time is wasted upon those whom no one can either train or inspire. Selection involves offering inducements for those who ought to teach and eliminating the rest. Through scholarships the state can well afford to encourage preparation of the fit. Examinations rationally used and certificates conditioned upon teaching success must be more extensively used to eliminate. Schools for the training of teachers find it difficult to exclude students who are manifestly unfit for what they are preparing to do; it even happens that an institution confers upon a candidate a certificate formally stating his fitness for teaching, though not an individual member of the faculty would recommend him for that work.

Even though eliminated without a single statement of fitness for teaching, there are school boards which are willing to employ upon appearances or the empty testimonials of general character, qualifications written by a layman who does not know how to rate teaching ability. It is often an important function of normal schools or recommendation and appointment committees to keep unsuitable persons from trying to teach. The ease with which total teaching failures so often secure positions sometimes leads sensitive students of education to wonder whether school boards use as little business sense in conducting their own affairs as they seem to manifest in employing teachers.

Qualifications of the teacher. 1. *Personal, moral, and social qualities and improvement.* All who teach are expected to

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possess a good measure of such personal, moral, and social qualities as honesty, courage, justice, firmness, persistence, kindness, sense of humor, tact, and the blanket term, personality. But one who expects to grow professionally must give more than a conventional meaning to each of these characteristics. They must be given a specific content in relation to the teacher's situations and problems. Honesty, for example, includes the rather negative virtues of paying one's debts and reporting daily attendance truthfully, but it includes also giving full measure in the status he occupies. Is it honest to go before a class without exhausting every effort to gain a thorough and enlightening knowledge of subject matter in all its relations? Is it honest to allow discipline to relax during the last days of the term? Or, turning to the field of intellectual honesty and courage, does refraining from reading a book because of fear that it may unsettle one's beliefs indicate an honest or courageous attitude?

Many of these general qualities are so thoroughly personal — part and parcel of what we are — that, like stature, taking thought concerning them can bring no increase. But, allowing for very small differences in fixed natural endowments, it is still possible to profit by recasting simple virtues in relation to school situations and using personal resources to the best advantage. One who has no great measure of "presence" gains very greatly by having the positive manner which rests upon the consciousness that all plans are made and ready for effective work. A teacher who is surly or unkind could probably not be made over into a fit person for the schoolroom, but what are taken for these impossible qualities are more often than not mere mannerisms — tones, emphasis, gestures — which can with determined effort be modified if

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they seem to be misunderstood. "Personality" itself may be enlarged by conscious effort, usually involving the difficult first step of constraining oneself to give attention to what another appreciates when the line of less resistance dictates, "I never cared for that."

A very long line of life interests to which a person shows indifference is not complimentary; in disclaiming interest in fine music, art, literature, or the great things of life the teacher is usually proclaiming his own ignorance or restricted views. Considered in this light, admission of present indifference should become a spur to future achievement. The little niceties of polite conduct which are so large a part of life may be acquired by all who have the will to profit by association. Even tact is usually reducible to elements which can be acquired by study of our companions. "Why did I seem inadequate for that situation?" "What was it in my language that seemed out of place?" "Just why was —— so much more at ease than I?"

2. *Educational preparation. a. Thoroughness.* Thorough academic training is an essential qualification. In preparation for the teacher's career, "mastering a subject" frequently means more than is necessary for others. It may be sufficient for the layman to possess a vague, hazy, or mechanical appreciation of many facts of human interest. Such knowledge is of no value to the teacher as professional capital. Merely getting correct results in practical problems encountered represents satisfactory arithmetical ability for the lawyer, clerk, or housewife; the teacher must understand principles and know well enough to tell clearly how and why in all processes rather than the few most used in a single vocation.

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b. Specific training in every subject taught. The teacher should have specific training in each subject taught. With a very large proportion of elementary school teachers, preparation in the common school branches is lacking or limited to a review of textbooks not more advanced than those used by pupils. Drawing and music are sometimes taught by persons who have not even had an elementary school course in these subjects. Lacking opportunity to make adequate preparation in a good school, the teacher who wishes to maintain his professional self-respect will soon find a substitute in special or private study.

c. Knowledge should be wider than subject taught. The teacher must know his subjects in many relations. An inevitable but unfortunate result of extreme specialization is a tendency to neglect correlations. This is especially marked in schools conducted upon the departmental plan. How proudly and honestly does the young graduate, inspired with the supreme value of his "major subject," say, "I don't know anything about that; it is not in my field." And quite as often does his specialized teaching reveal its own narrowness and absence of meaning. The teacher who remembers that he is teaching children rather than subjects is not thus proud of his ignorance. Only the one who "knows it all" is more objectionable than one who is ignorant of or undervalues the work of others.

d. Ready and exact knowledge. The teacher needs a ready and exact knowledge. The most thorough education leaves many details untouched when tested in the teaching relation with ever varying groups of pupils and environment. The supreme confidence of well-trained teachers has been rudely shaken by unforeseen difficulties in elementary textbooks which

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are obscure, technical, or employ the tenth mode of expressing what the teacher knows in nine other ways. It should also be noted that all soon forget important details of what they learn and that many never thoroughly understand until they teach. Alert teachers of almost every grade learn more during their first year of experience than they teach to any of their pupils.

3. *Professional training.* Professional training is indispensable for most teachers and advantageous to all. Its essential purpose is to give a sympathetic understanding of pupils in relation to the work to be accomplished. Psychology and child study give a viewpoint which must be supplemented by observation thus made intelligent. Method courses consider subject matter in relation to the child. These and pedagogical readings in general open the teacher's eyes professionally and make it possible to reach a level from which the untrained teacher is excluded. But all such studies are impersonal; to function in daily work they must be made specific and personal by application to pupils. "The six year old is individualistic, lacking in power of sustained attention, and without accurate motor control" may be turned to account in explaining Johnny's selfishness, restlessness, and awkwardness in writing or drawing.

Subject matter being thoroughly understood, the teacher needs to project professional knowledge upon every coming lesson or contemplated plan of management; the attitude which impels such thoughtful dramatization of each anticipated situation is one of the major results of professional training. Instead, the popular conception has sometimes been that of acquiring ready-to-use methods; the cocksureness of ignorant teachers with slight professional background

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and their belief in the infallibility of little devices has even led sometimes to a doubt of the value of training in methods of teaching. Whatever may have been true in earlier days, no school for the preparation of teachers now pretends to train uneducated persons effectively or to make competent teachers out of the ignorant by means of any system of devices. Attitudes, principles, ideals, and acquaintance with skillful teaching are of far more worth; equipped with these it is usually found that every educational end may be achieved by several different methods, no one of which is infallible or indispensable.

4. *Teaching experience.* Experience is so important in developing teaching skill that many school boards employ only those who have taught successfully. "How am I to have experience if they won't let me start?" is the thought sometimes expressed by the beginner in search of appointment. The answer of the village or town board of education very often is "Teach a rural school." The rural school thus becomes the practice institution, the children who attend suffering by the mistakes of those who are growing into full teaching stature.

Teaching in a normal training school or normal practice department is usually not considered in the same light as "actual experience." The fleeting nature of the instructor's interest in the class, the tendency to encourage procedure which is frankly experimental, and often the very small and untypical group of pupils taught restricts the value of such work as preparation for a teaching position; but when well safeguarded, it has many points of advantage over actual teaching without close supervision. Merely teaching does not guarantee improvement, and its most noticeable effect is some-

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times to fix bad teaching habits which must later be eradicated. Many superintendents object to employing a teacher who has worked for a long term of years in a school which is meagerly equipped and crowded in its schedule. Under such conditions necessity accustoms one to be more or less satisfied with a low grade of attainment, and develops skill in doing without teaching equipment rather than in its use.

5. *Supervisors' estimates of teachers.* For the purpose of improving teachers or determining their fitness for advancement, supervising officers find it indispensable to employ scales or standards of efficiency. The intuitively derived expressions " that is a good teacher," " good teaching," or " bad teaching " lack the precision required to bring about improvement which must always be in some specific direction. To the incompetent these standards supply an effective answer to the question "*Wherein* has my work been unsatisfactory?" It is only fair that the teacher should know the standards used in judging the work. If a supervisor is unable to give at least a brief list of qualities or specific attainments expected, there is reason to doubt the value of the supervision. While each uses terms in a peculiar sense and differences of opinion will always exist as to relative significance of details, mutual appreciation of standards is essential. In the belief that teachers will be aided by acquaintance with scales used in determining merit, typical scales for judging teachers are included among the exercises at the close of the chapter.

Proper conservation of teachers' time and energy. A cardinal problem for every teacher is the wise and economical distribution of time. No one is in greater need of the stoical virtue of equanimity — evenness of mind — and nothing more quickly renders this impossible than the panic situation

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of not knowing what to do next in the presence of several demands. The nervousness of many teachers is due to the relentless pressure of the pace that kills. In so far as overcrowded days are responsible for lack of adjustment and consequent worry, the following simple suggestions represent ways of obviating a situation not escaped without effort.

1. *Frank recognition of the peculiar demands of the profession.* First, frankly recognize the peculiar claims of the profession. The daily work of instruction and discipline is strenuous in a marked degree, and the comparatively short school day must be increased to the full working hours of other occupations by necessary daily preparation. Though five or six hours seldom represent the amount of service performed by the conscientious teacher, and work is sometimes so arduous that more evenings must be given up than may be required of our friends in other pursuits, society seems to have made compensation by keeping Saturday free from school. To chafe because one must occasionally forego social pleasures not denied to those who work six days in the week is unreasonable.

2. *Limitation of social service conditioned by demands of school.* Tacitly or by specific resolution a limit must be established for participation in community activities. The school is first in one's interest; what shall be gained by neglecting it for even the most important social duties? The only satisfactory course is to proceed cautiously in incurring the obligations which every community heaps willingly upon those who can do. Shall I teach a class in Sunday school? Do choir work? Take a leading part in a home-talent play? The answer must depend upon the effect which such participation in the social life of the community may have upon the specific work for which the teacher is paid.

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Little respect is felt for one who slights his own business in his zeal for other causes, however worthy. Most teachers are not clearly conscious of the nature of the choice they are called upon to make; social duties may not conflict with school hours, and daily preparation may be faithfully made, but if this is at the expense of needed sleep or recreation, the teacher's best standard of work is not maintained. One who is nervous, peevish, forgetful, or lacking in vigor and alertness because of dissipation of energy in many fields is placing himself in a professionally immoral situation. If, in spite of all precautions, the teacher is "drawn into too many things," he should put to himself the question of the stoic, "Which would you rather give up—yourself or some of your troubles?" Nothing less than this is the alternative involved.

3. *System as a conserver of time.* Reduce to economical system all necessary routine. If alphabetical arrangement becomes habitual, precious minutes or hours spent in searching clippings or other helps may be saved; if material to be carried home is always placed upon the same corner of the desk, fewer useless trips will result because of something forgotten. Depending upon memory is a wasteful practice; depend upon system.

The teacher's philosophy of professional relationships. Every worker has his philosophy; all philosophize concerning their own professional status and the ethical relationships of their occupation. It would be profitable for most teachers to think more clearly into a viewpoint which evaluates their social service and estimates proper attitudes toward their work in all its meanings. If a consistent philosophy of life based upon true professional orientation were more generally adopted, there would be greater professional sincerity among those who

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teach and less sentimental patronizing among laymen whose attitude indicates commiseration or pity for the teacher, a mark of favor which the self-respecting universally resent. The following self-formulated viewpoints would probably characterize the professional creed, code, or philosophy of most teachers if they arrived at a clear statement of their ideals with regard to the same phases of the situation.

1. *Why I teach.* I teach for the same reasons which lead others to enter their professions. I teach for *money*, because I must earn a living; I believe my work is rendering a high degree of *social service* and so I have faith in my profession just as I hope my neighbors have in their crafts and callings; and considering my own circumstances and disposition, I *prefer* teaching to any other vocation I might choose. I am not a martyr; I have elected my career and am giving my life to it in the same way that every worthy craftsman gives to his chosen labor. I am not professionally more self-sacrificing than my neighbors, the lawyer, the editor, the carpenter, and the merchant.

2. *Narrowing tendencies of my vocation.* My work, like that of my neighbors, exposes one to peculiar dangers in developing attitudes and reactions characteristic of daily activities. The minister thinks of souls and how to uplift; the physician considers all as possible cases; the clerk is reckoning sales. I cannot talk long with any of these until I discover that his subjects of conversation, even his figures of speech, are chosen from his trade or vocation. These talk and act a great deal of "shop." My own profession might lead me to be dogmatic since I spend so much time trying to enlighten those who have little ability or desire to contradict; it might lead me to pedantic instruction of companions when they do

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not care to be taught; it might cause me to dwell too much upon little flaws and inaccuracies of language and make me over-ready in offering corrections and volunteering information. In spite of myself I am more and more influenced by my work, but knowing the dangers which tend to twist my personality, I seek counteractive measures. I choose some of my associates among those who know fields in which I am but a child and my opinion of little worth; most of the books I read do not mention the schoolroom, and the daily newspaper and good magazines receive more of my time than educational periodicals; such avocations as I pursue for pleasure or profit detract nothing from my vocational efficiency. I do not object to being known as a teacher, but cultivation of interests outside of my work makes teaching more fully worth while.

3. *Small initial professional margin increased by capitalizing experience.* I recognize that however well trained I was when I began to teach, my professional equipment constituted a very small margin over and above what may be expected of "all intelligent people." I increase my professional value by a critical attitude of self-examination which adopts the tough-minded plan of thrusting aside excuses in the insistent question, "Was that piece of work a success or a failure?" and of assuming that I am guilty of every failure until I can roundly prove myself innocent. Perhaps the children are slow and inattentive and the parents indifferent; very well, these rather than ideal children and parents are my problem. My service is not measured by what I might do if I had a chance, but by what I am accomplishing now and here.

Critical attention to the present strength and weakness of my work renders me able to capitalize experience by repeating what has seemed effective and avoiding what proves wrong.

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If I did not thus realize upon my investment of time to increase my technical margin, experience would render me merely an older, not a more capable, teacher. Through professional literature, exhibits, teachers' meetings, and visits to other schools, I am able to compare my work with what others are doing, thus greatly sharpening the critical insight with which I study my own methods.

4. *Professional rating most highly prized.* I rate myself professionally according to the opinion of skilled professional judges. I value the esteem of the community in which I work; for, without this, my best service cannot be rendered — it is part of my problem to please the people. I prize the good opinion of my pupils, for a school which justifies itself cannot exist if children are hostile or indifferent. But children are not technically critical, and the community is not very exacting in its strictly professional demands. By these the easy commendation "a fine teacher" is often bestowed upon those of unusual social qualities, with little regard to their teaching power. The expert supervisor applies more exacting technical standards, measuring results in the development of pupils. Such rating only is of *professional* significance.

5. *Professional code requires etiquette of secrecy.* My code of professional ethics requires me to keep to myself many interesting bits of information which are mine because of my professional status. No one needs to tell me how a family lives at home if the children are in my school, but I am not within my professional rights if I communicate gossipingly unfavorable information thus secured. Neither have I the right to discuss in public and unofficially many facts concerning the inner conduct of the school or system. The teacher

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in the adjoining room may have done wretched work, the one who will have my room next year may give no promise of success, the supervisor may be a doctrinaire or a thankless pedant, the superintendent may excel only in shifting responsibility — yet none of these are legitimate subjects of general conversation. All are professional matters to be treated professionally, communicated — if at all — to school officers and usually upon requests for information. It is almost always possible to secure needed changes by appealing to those who are officially and professionally next.

6. *Professional interest in pupils becomes personal.* I have a professional interest in the children I teach. In spite of sentimental discussions of ideal teachers, it never seems to me that I should be required to love them, for so many are quite unlovable — the untidy, the deceitful, the rude, the stupid, and all others furnished by subnormal or superindulgent homes. To love that nondescript group on the first day of school is clearly impossible, though it may be analyzed and classified. But in studying their needs as part of my work they soon occupy a warm place in my heart, suggesting more than a scientific interest; the close of the year finds my working knowledge colored by all manner of personal associations with the boys and girls in whom I shall always have a *personal* interest.

Professional outlook. The work of teaching in this country has not arrived at full professional status because of the presence of so large a per cent who make teaching a means while preparing for other pursuits. Unkind remarks in profusion have been addressed to those who are accused of giving grudgingly a portion of time for which they are paid while looking forward to a better remunerated or more congenial

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career in another field. It seems probable, however, that the major part of our army of "stepping-stone" teachers has honestly endeavored to meet obligations fully; many have left teaching with regret; and any one who is familiar with teaching conditions in a country where "once a teacher always a teacher" is the rule can bear witness by comparison to the boundless enthusiasm the shifting procession of young teachers communicates to our schools — a vigor and optimism not always found where teachers grow old in the service.

At present and for many years to come our schools would suffer immeasurably by reading out of the profession all who do not plan to make teaching a life work. But the loss due to the fact that so large a per cent of those who teach have had little experience is conceded to be very great; increased demands for specific preparation are gradually raising teaching to a professional plane; fuller compensation is accompanying the change. The future of our profession is to be better than its past; no one believes that world democracy can solve its problems without large use of its professional teachers. Democracy is safe for the world where the teacher's work has been well done.

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Exercises

1. Make a list of qualities proposed as essential for the ideal teacher. How many seem contradictory or impossible of realization? From the list select those in which you are strong; those in which you are deficient.

2.

	Per Cent
(1) Ability to discipline as shown by	30
(2) Ability to instruct as shown by	30
(3) Ability in administrative and clerical duties as shown by	15
(4) Interest in pupils as shown by	15
(5) Loyalty to school as shown by	10
Total score .	100

Complete the scale by showing the content of each of the five headings. Score the work of two or three teachers with whom you are acquainted.

3.

	Per Cent
The teacher as an individual	
Efficiency of the teacher as shown by	
(*a*) Care of schoolroom	
(*b*) Instructional skill	
(*c*) Achievement of pupils	
(*d*) Knowledge of subjects taught	
Total . . .	100

As in the preceding, complete this scale and then weight each of the five considerations with a number of points, the total being 100.

4. Adopting so far as possible an objective attitude, and writing as if concerning another person, write a complete analysis of your own strong and weak characteristics as a teacher.

5. In an extensive study of the characteristics of their teachers most valued by high school boys, fairness, kindness, disciplinary control, patience, humor, good temper, social ability, knowledge of

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subjects, clearness of explanation, and neatness were named in order. (Study by Miss Bird, *Journal of Educational Psychology*, January, 1917.) Make similar lists as you would expect desirable qualities to be named by patrons, school officers, and other teachers.

6. It has often been said that teachers are creatures of tradition. One writer states that their conservatism is due to the fact that they spend so much time with such unchanging material as "6 times 7 = 42," "Longfellow was born in 1807," and "The Arctic Circle is 23½ degrees from the pole." Lamb says of the teacher, "He comes like Gulliver from among his little people, and he cannot fit the stature of his understanding to yours. He is so used to teaching that he wants to be teaching you." Another peculiarity of the teaching situation, found almost nowhere else outside of prisons, is that children must listen to what the teacher says whether or not it is interesting and worth while. What evidence may be adduced to show that these peculiar conditions of the teacher's work leave their impress upon the manners of experienced teachers?

7. A superintendent said half-seriously that he had no objection to the study of pedagogy by his younger teachers so long as they did not take it seriously, and he felt certain that none of his older teachers would pay any attention to books on education. Give examples of mistakes made by teachers because they had studied education. Were such errors due to (*a*) wrong doctrines, (*b*) exaggerated views of the importance of some useful device, (*c*) a new theory not understood, or to some other cause? What evidence may be given to show that the superintendent was right or wrong in his statement concerning the indifference of older teachers to educational literature?

8. Experienced teachers very generally dislike teachers' meetings, because much of what is said is for the benefit of those who are just beginning to teach. The same teachers also complain that

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reading circle books are a bore since they repeat each other's content. What would you suggest as a means of professional improvement for such teachers while in service?

9. Select an educational periodical worth while to you because of its device and method suggestions, one which contains general discussions of larger phases of education and one of local value.

10. What specific value have you derived from professional training or the reading of a book for teachers? Has this been principally a change of attitude, more complete understanding of education, or modification of classroom procedure?

11. "It is unprofessional to apply for a teaching position if the applicant's training is inadequate, to apply for a position which has not been declared vacant, or in securing a position to make use of relatives or to accept the assistance of agents or of others interested in the sale of books or supplies, thereby giving rise to suspicion of obligation. It is also unprofessional for a teacher to resign from a position in order to secure a better one unless the new position represents decided advancement and the resignation is announced early enough to safeguard the community concerned." This is the essential content of a resolution of a state teachers' association. If you are acquainted with instances which are in violation of the spirit of this code, how did they affect public opinion in relation to the teaching profession?

12. Should a teacher or a superintendent write a testimonial for a subscription book which he has accepted as a gift? Under what circumstances should teachers ask book companies for free sample textbooks?

13. Upon the "etiquette of visitation" the following suggestions have been offered for the visitor:

(*a*) Enter and leave the room quietly.

(*b*) Ask no questions during recitation.

(*c*) Remain at least a full recitation or class period; flitting visitors see little and are not welcome.

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(*d*) Do not copy work or write comments unless you are sure it will not embarrass the teacher.

(*e*) Report only good points in the teacher's work. Make a similar list of suggestions for the teacher whose room is being visited.

14. Account for such expressions as these which are very frequently uttered by school board members: "Any teacher can get written recommendations." "We never read testimonials carried by applicants." Many school men wisely refuse to give written indorsements to teachers. With these facts in mind how would you proceed to furnish information concerning your own teaching ability if you were applying for a position in a community where you were not known? Write a formal application for a teaching position.

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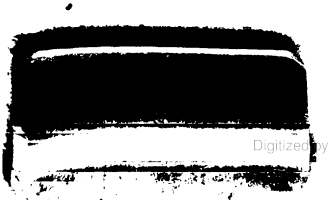

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